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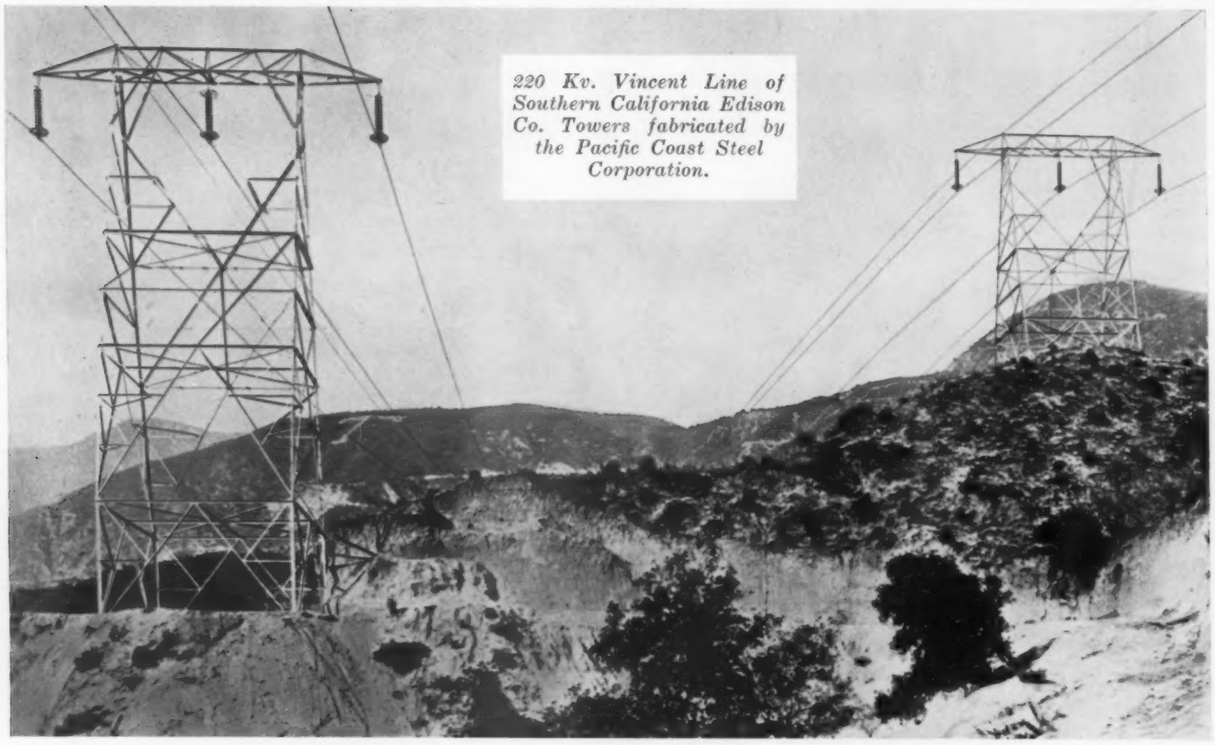

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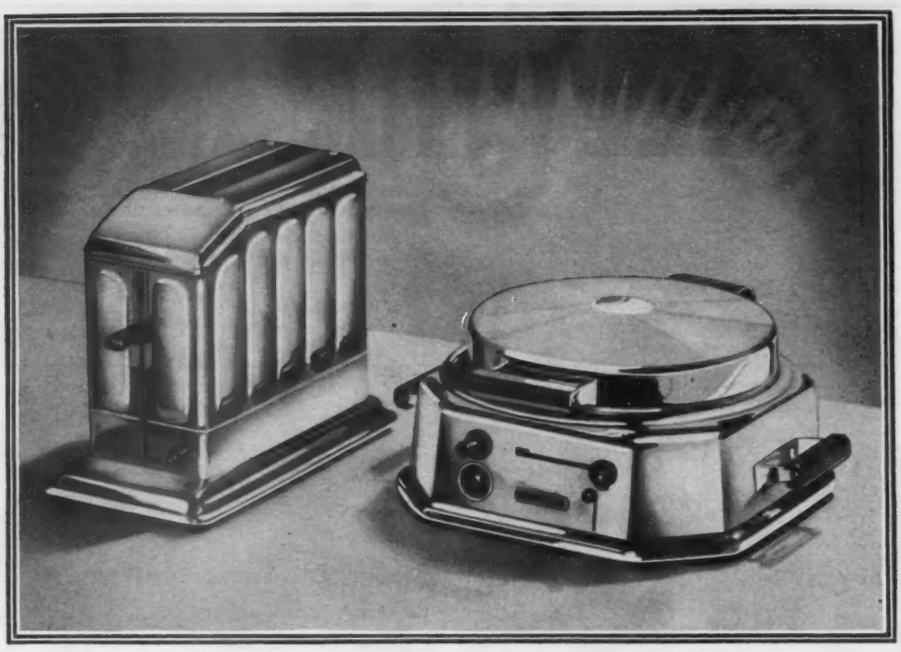

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ELECTRICAL WEST

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Volume 67
Number 4

G. C. TENNEY, *Editor*

SAN DIEGO councilmen's hopes for a publicly owned street light plant were chilled by cold engineering data of Engineer Lester Ready's special report.

▼

WHEN promoters of Seattle City Light's new 23-story building stopped at the first floor, financially embarrassed, the city council decided to assume control, finish two stories, obtain necessary funds from ever providential utility bonds.

▼

FRESNO'S mayor, spurred by local newsbarking, demands lower rates, despite his city's dependency on the farms to which preferential rates were recently granted; threatens a municipal plant that would further shift burdens to farm properties.

▼

INVESTIGATORS looking into nooks and corners of Los Angeles Water and Power Bureau for concealed decay seem only to be stirring up the usual clouds of political dust.

▼

NOTICEABLE in two engineering meetings was a complete shift from pioneering construction to intense studies of operation and system planning economies in search of small or large gains in efficiency.

▼

BUDDING utility districts and Oregon's one-man commission find the intricacies and vagueness of that state's new law impeding and befuddling.

The Month

RESEARCH into consumer needs in electrification is upheld by many thinking minds as the intelligent means of projecting the appliance market well into the future.

▼

DOCTORS as usual disagree as they feel the pulse of the small appliance situation, yet looking at its tongue reveals the business to be as good as its diet and care.

▼

SOME companies who have removed the "biggest sales obstacle" to the range by absorbing it, relate the elements of success of their plans.

▼

THAT cooperation works when properly and sensibly applied, where all parties to it enter negotiations without rancor or suspicion, is attested by tangible campaign results. In other cases where difficulties exist, symptoms of discord are analyzed and remedial measures advocated.

▼

MONTHS spent in taking stock of itself and picking tasks that need doing have faced the electrical industry of California, through its Bureau, toward the new year and the remainder of this with a definite program.

Editorial

Surplus of Everything Except Salesmanship

SURPLUS capacity in generating plants and on transmission and distribution lines is a condition facing every light and power company today. This surplus has been brought about by decreased use of service by large industrial customers. Although gross revenue from residential business has increased, the loss from industrial users has been so great that in the majority of instances utility revenues are lower than in 1929 and 1930.

Here is a situation that is a direct challenge to every commercial department. Opportunity awaits the salesman to prove his usefulness. Operating departments have cut production and distribution expenses so that new revenue brought in by the commercial department may be reflected immediately in net earnings.

Electricity is still a bargain. It will bring the public just as much pleasure, health and convenience as ever. It will still save labor and money. The appliances that consume it are cheaper in price. A good salesman would not ask for better sales arguments than those which make electricity the best buy in the marketplace. Are there good salesmen in the electrical industry? The financial statements of the power companies during the next few months will tell.

Depression Has Not Hit Government

"THERE is no depression in Washington, D. C.," an engineer who had just returned from the national capital told the editors recently. As a literal statement this is highly significant. The engineer meant that there was no unemployment outside of the newspaper columns; government bureaus were operating normally; neither salaries nor hours of government employees had been reduced; if curtailments had been made, they were not evident.

Governmental revenues, like those of business generally, have been seriously reduced. But where business has taken drastic steps to make the pattern fit the cloth, government goes on blithely spending. A federal deficit of almost a billion dollars has been financed with long term bonds—to be paid from taxes levied on the next generation. State and local governments are issuing more bonds, increasing current levies.

Business and industry must exert political pressure if they expect tax charges to be reduced. Politicians in turn must recognize that economy in government is vitally necessary. Governments, like businesses, have been known to go bankrupt.

Gas Competition Girds for Battle

FOR MANY years gas cooking and heating basked in its superiorities of acceptance, speed and economy, and gently laughed up its sleeve whenever electric cooking, water or house heating were mentioned. All of these inferiorities acted as a goad to the electrical industry, spurring it to developments which equal and now even surpass cheap natural gas in acceptance, speed, and over-all economy.

Awaking to the realization that electricity had made serious advances upon their seemingly impregnable position, the gas appliance manufacturers themselves were spurred to new development. At the recent Natural Gas Exposition held in San Francisco in conjunction with the Pacific Coast Gas Association convention, gas appliance manufacturers proudly displayed their new wares.

An impressive display it was, too, and the interesting feature was the way in which the hitherto exclusive features of electric ranges were incorporated into the new gas ranges—insulated ovens, porcelain finish, and automatic controls. What is more to the point is that in their striving to regain position, the gas men have added features to their ranges which again give them certain superiorities. Among these, ironically enough, was an electrically driven barbecue spit for broiling. Trays and racks on roller bearings and other little refinements of convenience were incorporated, to many of which electric range manufacturers have not yet come.

Reawakened activity on the part of the electrical trade should follow immediately. Leadership of the field is no position which allows a smug repose on one's laurels. The very fact that electricity must be used to provide the gas range with some of its newer refinements is an index of the fact that electricity has far greater potentialities for development than its competitor.

And lest one imagine that gas is no competitor for electricity's place in the sun, a recent article in *Western Gas*, outlining point by point comparisons between gas and electric ranges, by which to belittle the electric range in favor of the gas range, is to be

regarded as a sign of impending battle. ELECTRICAL WEST has consistently refused inverse articles of similar nature in the belief that electric cooking could be sold without reference to the effect of gas fumes on health, tarnished silverware, gummy ceilings, and such other niceties as desperation can conjure up on unfavorable occasion.

Evidently the gas industry, in many cases carrying electricity on the other shoulder, too, is girding for a supreme struggle for possession of the great American kitchen and home. To the electrical industry this augurs excitement, exercise of skill and brain, ingenuity and strategy, improvements of products and service—the spice of life.

Let it come!

Youth and The Future

GRADUATING from the classroom into the complexity of modern business, the young engineer faces a traditionally cold and often too callous environment. His lack of experience, limited financial means, and the minor nature of his responsibilities limit not only his viewpoint, his contact with the industry, but also his expression of any original ideas he may possess. In short, at the most impressionable time of his engineering career, he lacks the stimulus of encouragement and guidance from his more experienced contemporaries.

Realizing that future contributions to the advancement of the industry lie in the training of the younger engineers, the A.I.E.E. in the past has stressed the desirability of student participation in Institute affairs. Already mutually beneficial results are apparent. At the Tahoe convention, student papers and student interest in the industry evoked highly complimentary comment. Technical ideas contributed represent original research along valuable lines of investigation in many branches of the profession.

Thus budding thought, even perhaps genius, is not frost blighted before it has an opportunity to attain useful fruition. In this the Institute shows itself wise in human understanding of youth as well as intelligent in the perspective it maintains of the future of the electrical industry.

NEWS report from Sonoma, Calif.—"One of the most completely equipped alcohol plants ever confiscated in Northern California was raided by federal officers today. . . the still had the most modern equipment and was operated entirely by electricity." *There goes another industrial load.*

First Three Years Are the Hardest

SUCCESS of the "three-year-guarantee" policy as applied to electric refrigeration has brought the suggestion that an extension of the policy to all high-grade appliances be made as an offset to the decline such appliances have fallen into because of low-priced appliance competition. There is considerable merit in the idea.

At the present time the high-grade appliance has little to distinguish it from its low-priced competitor, except in finish. Even this is against it, for the too-beautiful appliance is often regarded as an elegant decoration which it would be a sacrilege to desecrate by putting it to the mundane purpose for which it was made—such as baking a waffle or making coffee. The low-priced appliance has a utility and abuse resisting appeal it seldom deserves.

Intrinsically, the well made, high-grade appliance has more stamina built into it than has one of a lower grade. It can stand a three-year guarantee without flinching. Might it not be an excellent selling point, an added superiority to offer in the bargain, with which the dealer could sell it in preference to the lower priced article and to his own and his customer's greater profit?

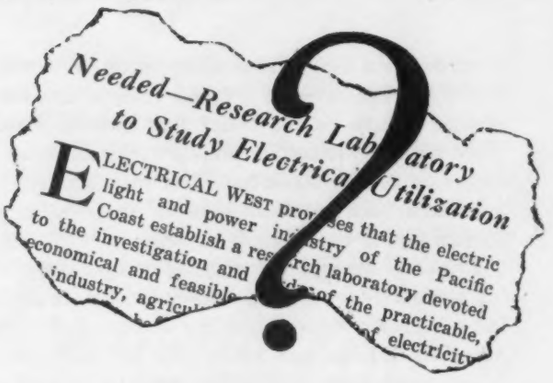
Politics and Public Utilities

"THE STREET railway must be free and must be kept free from political interference. No management can succeed if hampered by political interference . . ." This startling admission on the part of the Hearst press with reference to the Seattle municipal railway is tantamount to declaring that the city should sell out to a private corporation. It is a sharp reversal of policy from a newspaper which holds that government ownership of almost everything except the press is in the interests of the people.

What the Hearst press insists that Seattle needs are the things that every municipally operated utility requires if it is to be successful. History is full of proof that politics and business do not mix. As long as mayors are recalled or other city officials elected on platforms that deal primarily with the conduct of municipal utilities, there will be investigations, charges and countercharges and politics.

Municipal utilities always will be political footballs. To expect otherwise is to dream of Utopia. When the Seattle railway or any other municipal utility is placed under capable, expert management relieved of political strings, it will be as a privately owned and operated enterprise.

Is An *Electrical* RESEARCH *Laboratory* Feasible


Needed—Research Laboratory to Study Electrical Utilization
ELECTRICAL WEST proposes that the electric light and power industry of the Pacific Coast establish a research laboratory devoted to the investigation and development of the practicable, economical and feasible uses of electricity

Interesting Comments by Educators and Men of the Industry on Electrical West's Proposal of a Research Laboratory to Stimulate Load Growth by Creating New Electrical Applications

MEN and money, two dominating factors in the success of every enterprise, comprise the basis of industry's frank comments on load building via the research laboratory route. Significant is the almost unanimous acclaim for the idea editorially propounded in these columns, but administrative and financial problems are cited as difficulties imposing conditions which presage failure to all but the most carefully planned procedure in establishing this electrical research laboratory.

The following excerpts from letters by educators and executives of the industry in the eleven Western states represent a cross-section of opinion as to the need, the justification, and, to some extent, possible methods by which such a laboratory could be established.

In commenting upon the desirability of research along utilization lines, an executive of one of the leading manufacturers points out that "25 years ago the suggestion was made to the lumber industry in the Pacific Northwest that establishment of a research laboratory would serve to insure the future of that industry by finding new uses for wood products. Lumber men scoffed at the idea, holding that there could be no substitute for lumber. The fallacy of that belief is evident today when lumber substitutes have made serious inroads into the market.

"As a suggestion, if the utilities themselves are unwilling to undertake research they should urge the few electrical manufacturers who do support extensive research organizations to continue this work. In times like the present research may suffer by necessity when curtailment of expense is the order of the day. If this research is to continue, something more than mere moral support from the utilities is essential."

Addison B. Day, president of the Los Angeles Gas and Electric Corp., believes that "the fact that the Pacific Coast leads in the utilization of electricity in agriculture and in the home, and has a larger percentage of its industries electrified than the rest of the nation, indicates that such a laboratory is not needed.

"The larger manufacturers of electrical appliances have splendidly equipped research laboratories and have done much in assisting the electrical consumer to make every practical and economical use of electricity warranted by his demands for service. The problem of the electric light and power industry is better service at lower rates and there is no greater stimulant for the utilization of electricity than dependable supply at low cost."

A. G. Wishon, vice-chairman of the board of the San Joaquin Light & Power Corp., makes the following statement:

"I have your letter of Aug. 12 in regard to the establishment of reasearch laboratories for electrical utilities. I think the suggestion is a good one.

"We are trying our best to improve our service to the public and to do so successfully it should be done in a very scientific manner and there is nothing that will tell how it can be accomplished like a research laboratory."

L. B. Fuller, chairman of the department of electrical engineering, University of California, endorses the idea in the following statement: "The cost of organizing, equipping and maintaining a special research laboratory for the purposes you have proposed appears prohibitive, not to mention the difficulty of obtaining competent personnel.

"I believe the solution lies in our universities. Men with experience in commercial research laboratories, acquainted with their operating costs, will attest to the fact that research of this character can be conduced at minimum expense by the universities in close collaboration with the power companies. Problems of general operating overhead, salaries and the purchase of expensive instruments and research apparatus are largely eliminated. The plan should be to bring the problems to the men and facilities, wherever they may be located, rather than to bring the men and facilities to a common location in a special research laboratory.

"If the power companies pool their interests and intrust the management of the undertaking to a committee, as in the case of the Committee on the Relation of Electricity to Agriculture, I believe that in the long run the financial gains will exceed the expenditures. The suggestion that the industry establish a number of fellow-

ships in various Western universities which would support research for theses for the Masters' and Doctors' degrees, is excellent. In addition to maintaining the various fellowships, the committee representing the power companies should be in a position to award specific sums for the expense of prosecuting the various researches. No doubt the success with which the various universities conduct their researches would affect the decisions of the committee each year regarding the placement of funds and fellowships.

"It would be necessary for the faculty men heading the research work in the various universities to meet with the committee of power company representatives from two to four times per year for the discussion of problems of general policy, for the consideration of proposed investigations, and particularly in order that the faculty men may be kept well informed regarding the problems of industry."

W. L. Frost, vice-president of the Southern California Edison Co. Ltd., states: "While the editorial is interesting and suggestive, it is my opinion that the project is not one to arouse a great deal of enthusiasm in these times. I do not believe the industry in general is in a position to provide the funds that would be necessary to equip a research bureau adequately, and further I believe that it would be difficult and no doubt very expensive to find a man of exactly the right type to direct the activity. It could not be expected that the results would be immediate, being more likely that at the very best no very tangible results would be secured for a considerable period of time.

"A point to be considered is that, judging from past experiences, it would be difficult if not entirely impossible, to secure financial support from government or municipally owned competitors of the private institutions, who, as usual, would, without expense to themselves, reap the benefit of money spent by private companies in this direction.

"I have no doubt that the right kind of a research bureau, managed by the companies and under the direction of the right man, if one could be obtained and if arrangements could be made for ample financing, might accomplish a good deal of purely commercial and economic research that would be valuable. Frankly, I think the power companies would be sympathetic with your idea at the present time, but think that they have no money available for carrying out the idea on a scale that would be adequate."

F. O. McMillan, research professor of electrical engineering, Oregon State College, writes: "Your editorial, 'Needed—A Research Laboratory to Study Electrical Utilization,' is very timely and worthy of serious consideration and action on the part of the electric light and power industry of the Pacific Coast. In the electrical field many problems that need investigation are pushed aside by the operating company because of lack of time, personnel, equipment or some other needed facility to carry the work through to a satisfactory conclusion. An adequate research organization dedicated to the improvement and extension of the use of electricity would without a doubt be a great asset to the industry. Properly directed research has never yet failed to pay a manifold return on the investment when results have been calculated on a long-time basis, and this is the only basis on which a permanent industry can be established.

"Industry has not yet fully realized the tremendous potential research facilities both in personnel and equipment to be found in the modern colleges and universities. On the other hand, educational institutions have in many instances been slow to recognize their opportunity to render service and at the same time vitalize their teaching by conducting research in cooperation with industry. It is, therefore, my opinion that a foundation such as has been proposed would prove of great value even if it were necessary initially to limit the scope to the establishment of fellowships and grants in aid of research in colleges and universities."

Robert G. Sproul, president, University of California, responds:

"I regard the establishment of such a laboratory as highly desirable, but am of the opinion that it would be much more fruitful if connected with a university than if established as a separate institution. Just as teaching should be vitalized by fresh thinking, so research is, in my opinion, more likely to be successful where it is carried on in close contact with the active life of a teaching institution.

"Fortunately, such an arrangement is also far less expensive because operating overhead, salaries and many expenditures for equipment are eliminated by conducting research at a university center.

"The suggestion for the establishment of a number of fellowships in various Western universities which would support research for theses for Masters' and Doctors' degrees . . . would seem to me a highly desirable first step."

E. G. Stahl, sales manager of the San Joaquin Light & Power Corp.—"I have been very much impressed with your proposal for the establishment of a research laboratory by the electric light and power industry of the Pacific Coast for the study of the utilization of electricity.

"I have been a member of the C.R.E.A. for a number of years. I have realized the importance to the electrical industry of the research and experimental work being done by this body in the agricultural field. The work of this group has resulted in a large volume of business for the utilities despite the fact that its primary object has always been to solve problems of agriculture rather than to build load for the power companies.

"I believe the opportunity for developing new uses of electricity is infinitely greater in the industrial field than in agriculture, and at the present time the utilities (those who are most vitally interested) are leaving this problem to the industries themselves.

"I am not one of those who subscribe to the theory that the future of the electrical business depends entirely upon the domestic load. Our average domestic consumption in California, about 650 kw.-hr. per year, has been secured after years of intensive sales effort under ideal conditions. Should we double this amount, we would be adding no more than one billion kilowatt-hours to the output of California utilities; while the undeveloped possibilities for the sale of electric power in agriculture, the chemical industry, the oil industry, the steel industry and many other industries have possibilities so great as to almost tax the output of California gas wells for the generation of this power.

"It remains only to develop uses for this energy, and your plan of a research laboratory appears to offer the best method of creating these uses. Of course, the question of financing this plan is one of the big problems and one that will have to depend upon the decision of utility executives."

M. Lyle Spencer, president of the University of Washington, states: "I am of the opinion that a research laboratory, not only for electrical problems but for problems of all engineering branches, should be established as soon as possible. This laboratory should be placed under the direction of an 'industrial contact man' who has had broad practical experience in analysis of problems and in their practical solution.

"A research institute such as is contemplated by the editorial could be made self-supporting within a few years of its inauguration, if industry could agree to the following plan:

"Any problem presented to the laboratory should be accompanied by a sum of money, placed on deposit with the institution. If the problem were satisfactorily solved, patents would be applied for by the inventor at the expense of the industry. These patents would become the property of the industry, with an agreement that a 10 per cent royalty would accrue to the research institute. The amount of income of the institute would then be an index of its service to industry. If there should be no income, the institute would cease to exist and would die of dry rot automatically."

P. M. Downing, vice-president of the Pacific Gas and Electric Co., in expressing his views, states that "I am still somewhat in doubt as to the practicability or the value of such an activity. In the first place, it appears to me that the situation is fairly well taken care of between the manufacturers and the central station companies. These two interests work very closely together: The manufacturers are naturally interested in the development and manufacture of appliances to increase their sales, and for a like reason the central station companies are interested in having a consumer install new appliances.

"As already stated, the manufacturers maintain research laboratories and devote a great deal of time and money to the development of appliances, not only for agricultural uses but for use in industry, commerce, and the home. They are better equipped to handle research work, and what they are doing corresponds to a very great extent with what is being done by the American Telephone and Telegraph Co. in the Bell Laboratories."

"I think you have some very good ideas regarding the establishment of a research laboratory to study electrical utilization. A considerable work has been done along this line by various manufacturing concerns in the past, but when carried on by individual manufacturing concerns promoting the particular devices they have to offer, it does not carry quite the prestige that it would if the work were carried on by a non-partisan utilization research laboratory. I feel that this is a subject which can very well have the consideration of an organization such as the Pacific Coast Electrical Bureau, and would suggest that it might be advisable for you to bring it up for consideration at one of the future meetings of the Bureau."—*S. E. Gates*, manager, General Electric Co., Los Angeles.

Guy W. Talbot, president of the Pacific Power & Light Co.—"I believe any successful research work that will find new uses for electricity would be very desirable. On the other hand, under present conditions I do not believe that the central stations would want to obligate themselves for any money for this work. At least I would not want to and I believe it would be better to take the matter up later. Of course, the manufacturers have kept up pretty well with the demands for new uses and it may possibly be better to merchandise appliances for new uses gradually rather than to attempt to develop and merchandise too many at a time."

H. B. Walker, division of agricultural engineering, University of California, at Davis, from his close association with C.R.E.A. work, suggests: "The rapid development of electrical applications to numerous phases of our industrial and social life is evidence of its future potentialities,. The growing complexity of our commercial and social organizations, however, makes it imperative that expansions of service shall be logically introduced. This calls for comprehensive fact-finding studies in the various scientific fields directly and indirectly related to electrical phenomena. This involves research.

"The man is the most important part of a research program. Laboratories, apparatus and even financial support are all secondary. For this reason I should not favor the establishment of a research laboratory to study electrical utilization, but rather I should favor the establishment of an endowment or foundation to support researches looking toward a logical development of electrical utilization.

"Such a foundation should be established solely for the purpose of conducting research work which the industry itself cannot carry out through its own organization. Its most important task, however, would be to discover capable research workers.

"There are no standard specifications for research workers. A great research man is an individualist. He is willing to work almost incessantly at tasks which interest him and will just as readily scorn others which to the normal person would seem to be equally important.

"If a laboratory were established, then men of ability would have to be assembled at its location. This is not an easy task. It seems to me a much more logical plan to set up a foundation for a specific purpose and then, through proper administration, carry this support to the man no matter where he may be located, for as a rule research men usually love the environment where they reside.

"It seems to me that such a plan would permit greater flexibility in attaining the objectives for which such a foundation is established; it would be more effective in bringing specialized talent into action; it would avoid the

"I am sure that there is a very definite need for work of this nature."—*Ivan C. Crawford*, dean of engineering, University of Idaho.

"I personally feel that we have much to learn about the application of electricity to the farm and home problems and would be in favor of cooperation with an undertaking aimed to achieve progress in that direction."—*E. J. Iddings*, dean and director of extension service, University of Idaho.

"Your editorial is indeed timely, and I trust will be given due consideration by men who are in a position to finance this important undertaking. The economic depression should give added impetus to undertake a determined search for a wider utilization of electric energy. I am emphatically of the opinion that a systematic study for new fields of electric utilization would be of incalculable value to the electrical industries on the Pacific Coast."—*C. E. Magnusson*, director of Engineering Experiment Station, University of Washington.

"There is not the slightest doubt in my mind that such investigational work would amply repay the electrical industry, and I am sure the State College of Washington would be glad to cooperate in any way possible in promoting such an undertaking."—*H. V. Carpenter*, dean and director, College of Mechanic Arts and Engineering, State College of Washington.

establishment of a scientific institution and the problems attendant thereto, and there would be fewer hazards involved in attaining the objectives of the industries concerned."

S. H. Graf, director of engineering research of the Oregon State College, reviews the situation as follows: "Just briefly giving my views, it is obvious that if one new domestic appliance or application of electric power is developed and meets with popular acceptance, the entire cost of quite an extensive research establishment will be small in comparison with the benefits and the profits to the industry.

"I understand that the efforts made within recent years to stimulate the use of electrical energy in agriculture have been highly successful and it is not likely that the point of saturation in use of electricity has been reached in any field; however, it must be realized that conditions in industry generally, in transportation, and in the urban home are quite different from those in agriculture where the principal reason for non-use of electric energy has been that it simply was not available.

"In the program you propose real invention is involved and the first requisite is a few men who have capacity along these lines. Building a laboratory and organizing a staff in the usual way will, in my opinion, yield small return for the money. It would be far better to get one good administrative officer who has the proper viewpoint to look after the job and give him the authority to search out the half dozen or so men who really have ideas and arrange for them to work in existing laboratories wherever conditions may be best suited to their particular assignments. Some of these might and probably would be college professors who would work where they are with suitable arrangements with the institutions concerned."

Arnold B. Hall, president of the University of Oregon, gives endorsement in his statement: "I believe so thoroughly in the research functions of institutions of higher education and in the splendid attitude you are taking toward the encouragement of research that I wish to add my unqualified approval to your activities in this direction.

"In fields of knowledge with which I am most familiar it has been my impression that the establishment of fellowships for candidates for Masters' and Doctors' degrees constitutes one of the most effective plans for encouraging both the spirit of research and the actual accomplishment of tangible results."

A. S. Moody, Northwestern manager of the General Electric Co., concurring with this, states: "I am a strong advocate of research in any industry. I believe, however, that we should utilize to as great an extent as possible the existing agencies, as we do not want to duplicate any of our efforts. Consequently, it would seem to me that the facilities of our large universities could be utilized by perhaps the creation of a fund to supply fellowships for this study and possibly the industry should even supply men to work in cooperation with the universities.

"Our experiences in the Northwest with the Committee on the Relation of Electricity to Agriculture have been to my mind rather successful and they were modeled along this line, that is, by the industry contributing certain sums of money and working in cooperation with the directors of the government experimental stations in the state agricultural colleges."

Glenn L. Jackson, sales manager of The California Oregon Power Co., giving the sales viewpoint, writes: "I am heartily in accord with the idea of establishing some sort of a research laboratory devoted to the study of greater utilization of electricity.

"Each section throughout the country has special conditions and special problems, many of which could no doubt be solved through utilization of electric service. Such a laboratory on the Pacific Coast could analyze various industries, conditions, etc., as found in this part of the country and conduct experiments which would, no doubt, provide the means of additional energy sales. The cost of such a program would be unreasonable for one company to assume, but if such an institution were set up by contributions from all of the companies, the burden would not be excessive, and I am sure productive of considerable good."

Philip S. Biegler, dean of engineering, University of Southern California, states: "I endorse most heartily your suggestion contained in the editorial regarding 'A Research Laboratory to Study Electrical Utilization.' I agree with you that the every-day matters of household and industrial application offer useful problems in research.

"Moreover, research work of the type you have in mind would not entail immense laboratories such as are required for high-voltage or other electrical development. With modest laboratory equipment, and a few research fellows, supported by the electrical industry, I am sure much could be accomplished in research effort directed toward every-day utilization problems."

R. M. Alvord, manager of the General Electric Co., San Francisco, comments: "I have thought quite a little regarding the subject of your recent letter and I am not at all certain that the establishment of a research laboratory for the study of the utilization of electricity is a feasible move. The plan employed by the Committee on the Relation of Electricity to Agriculture, both here and in other states, whereby they make practical laboratory experiments in the field, seems to me the feasible thing to do, and if it is desirable to make experiments in the domestic appliance field, in industry and in other places, would it not be possible and perhaps best to try to work that out through the Electrical Bureau or other agencies, along the same line as that employed in connection with the work of the Committee on the Relation of Electricity to Agriculture?"

"In my opinion such a labortory, if properly organized and supervised, would be productive of much practical good and materially assist the industry in making further progress. It would seem to me that it would be rather difficult to secure the necessary financial support at this particular time and that it might be necessary to wait until conditions were more favorable or there was a prospect of their being more favorable than at present."—*M. L. Hibbard*, vice-president, Idaho Power Co.

"We are very interested in the project as you have outlined it."—*M. G. Neale*, president, University of Idaho.

"I have your letter and editorial in regard to the interesting proposal for the establishment of a research laboratory dealing with problems involved in the utilization of electricity. I have no doubt that funds could be employed to great advantage in the promotion of such a project."—*Robert E. Swain*, acting president, Stanford University.

A Slangy Fable

"And the Experts Killed It"

By Wm. A. Cyr

[Apologies, if any, should come from George Ade who started this sort of thing.]

IT'S REAL Fashionable to start off with a Definition. Well, for the purposes of this Three-ring narrative, the exact meaning of "Expert" is a person who ought to Know better. Goodness knows that includes a Lot of us.

For to be right honest, this story concerns itself with Smith, Jones and Robinson, who they are, what they are, and How they got that way. Also what about it.

Smith

Take Smith, for instance. Here was a man who liked to Believe what he saw in the newspaper. It was a good newspaper. He liked it. It always gave him the late Stock reports, the sport dope up to the Minute, a snappy presentation of the News—you know, made interesting by a Raft of high-priced Writers who told more about their Impressions than the Facts.

For that matter it was Smith's guide to buying his favorite Collar, told him where he could get Nukut clothes, and even advised his Wife where she could Beat the corner grocer on the Price of a dozen eggs.

Smith had a simple Rule of life. If a thing was advertised in the *Daily Sun-Times* it was apt to be Okeh. When you couldn't tell from the Ad, there was supplementary rule No. 1—"Ask your Friends."

So when in Doubt Mr. Smith asked his cronies, or people with whom he habitually did Business. All this is very Ordinary but Mr. Smith was just an ordinary every-day sort of Person. And there are a lot of Smiths in the Telephone book.

Mr. Jones

So much for the Smiths. Next gentleman is Mr. Jones. Jones was another Every-day sort of chap. The only thing different about him was that he Worked for that great public Benefactor, the Greater Pacific Light, Heat and Power Corp., Ltd. He was one of the Low-salaried engineers who laid out High-priced and Higher-voltage transmission lines. Smart egg, too, was Jones, for he managed between being an Engineer and of Welsh descent to make the narrow Margin he carried home twice a month stretch over a wide Front. He always managed to Look prosperous even if he did do a lot of Work around the house at Night.

By this is meant that Jones figured it all Out and decided there were Economies in wood and coal heating, a gas range, and going Easy on the lights and appliances. It took a lot of Bother but he never figured out that his Modicum from the Power Trust would spread over an electric range and such other Frills as his own Front office displayed.

It went over Big every time. And Smith just knew in his Inner Heart that Jones was a real power in the electrical industry

On lodge night Jones often met Smith. And naturally, who wouldn't, when Smitty asked brother Jones anything about Electrical stuff—radio, appliances, propaganda or Cigar lighters, Jones tried hard not to Swell up too big as he gave Smith some real hard-boiled "Expert" opinion. It went over Big every time. Jonesy never realized how Good he was until after he had been telling Smith a lot of Low-down on static Interference and low-voltage Power factor. And Smith just knew in his Inner heart that Jones was a real Power in the electrical industry.

Now for Robinson

Well Robinson also worked for the power company. He wasn't an Engineer. He was a Salesman. Somewhere in the Dim past he had done Something else when the company was Young and couldn't serve out "Juice" as fast as people demanded. But as far back as anybody remembers Robinson has been in the "New Business" department. Then, as a reward for Patient labors and recognition of prime Staunchness of heart in drought, Famine and pestilence, he had been made sales Manager. Like the other arts he has had to master, Robinson has mastered this one—Almost. Once in a while he gets a Kick in the Pants.

Introducing Brown

We have to bring in another Character here. It's Brown. The story isn't about him but he brings in the Plot. You have to have a plot.

Brown was Robinson's star salesman. He hadn't been Brought up in the power business at all. But he knew his Doorbells. He had the smoothest door Footwork of any one on the Force. Dotted lines were his Meat. It wasn't often that Brown hit any Snags. Housewives bought and Bought and their husbands paid and Paid.

One morning Brown came in to see the Boss. "Robbie" —a star salesman can Call the sales manager any darn thing he Pleases—"Where the heck (only it wasn't heck) did you get this line of Tin we're peddling now?"

Robinson, who had grown used to almost Everything, lifted up a speculative Ear. "What do you mean, tin?"

"Oh this Nonpareil line of Appliances. Who sold out?"

"Man, they're the Best on the market. We've investigated them All, Brownie, tested 'em, compared 'em, and finally decided to sell this line. I don't know of a better Quality product."

"Mebbeso," from Brown. "But where have they Been all these years? Who ever Heard of them, anyway? Is the manufacturer trying to keep it a Secret?"

"Why most Everybody in the electrical business knows them. The dealers have had them for Years."

"Yeah? But did they Sell any?"

"That's just it," Robinson hurried to explain. "We felt they weren't doing a Job, so we took it on Ourselves. Now we can do it up Big."

"Not if I know my Racket, we won't," said Brown. "I'm no baby to Lay down on a sales job. I can sell Coffins to Christian Scientists with the right Set-up. But this one isn't Right. Maybe a few Dealers know all about Nonpareil Classic Super appliances although I Notice the babies who are supposed to be Cooperating with us in this drive aren't making any more Dust fly than we are. And a few of us who Listened to that Missionary out from the Factory who talked so sweet may know about the Stuff but nobody else Does. It's a cinch to sell Hotco stuff and Western Automatic and a few others that Advertise, but who ever heard of Nonpareil, I ask you?"

"Say—" Robinson was going to Spike this one quick—"What about the Full-page spreads we've been running with this campaign? Say we've told the public Plenty. By now every Consumer knows we're backing the Nonpareil line, and what the Power company backs is all Right."

"Almost, you mean," said Brown. "In a couple of Years maybe we can do what the guy who Makes this stuff Ought to have been doing. But not in one Single explosion. It would be Jake if this stuff didn't cost Anything, but when you come to selling something with a Price on it, not so Fast. Say, Robbie, even This outfit isn't sold on it. And maybe you think That doesn't make it tough."

"What do you mean? The president Endorsed the campaign didn't he? You saw the Letter. So did the G.m. All the Brasshats put their okeh on it."

"Maybe so, chief, but nobody ever told the Overhead."

"The who?"

"The overhead, the Brains—all the high powered boys upstairs in the Drafting rooms and the Bookkeeping department. Nobody ever told half the 'Experts' we've got in this company."

"Experts?" from Robinson.

"Yeah, you know, the Low-down boys. Everybody asks them. We don't do a Thing in this company but what some friend of some Pencil pusher or meter Reader doesn't ask them what it Means. And do the 'experts' tell them? Listen. Even the department bosses and some of our choice Vice-presidents don't know the Half of it, Robbie, and maybe you think that doesn't affect our Sales."

"Oh how can it? They've all been told not to buck our sales work. Their own Jobs depend on the way the company grows. Most of them own Stock to boot. They don't knock us. What are you Talking about?"

"Great little Faith in human nature You've got, Robbie. No they don't knock. They just say they never Heard of it. The sale just Coils up and Dies right there. They're 'experts' ain't they?"

"But who pays any Attention to them?"

"Now say, Robbie, listen to this Smith job, It's only One but it's going on like this Every day. This one happened today and you might as well Cut your wisdom teeth on it, big boy."

The boys upstairs ought to get theirs if you can teach 'em to read Past the Cosines and out the Back Lot into the Ads

The Smith Job

"This now Smith," began Brown, settling down on the N.E. Corner of the Boss's Desk, "is building himself a new Seraglio out in the West End. Don't ask me where he got the What-it-takes in the Second of these Seven Lean Years. He must have tipped the Hand of Faro for sure. Anyway he has It, and I don't mean S.A. He's the ripest Apple that ever tempted Adam salesman today. He wants his hotsy Home and Fireside to have all the Doodads. And say, have the Others been selling him Folderols! The plumber has soldered two, count 'em, Polychrome Bathrooms to the end of a carload of Brass Pipe and screwed on Chromium Spiggots. The painter has Squeegeed fourteen colors and ten hues into the living room wall alone. The roofer has plastered up an Acre of antique tiles that have Aged-on-the-wood since the Padres. And what the Others didn't know existed the Interior Decorator has taken out in Rugs.

"Well, this Igloo was all ayearn for a Pastel colored Model Q, 1941 Nonpareil range, a couple of 30-gal. super-automatic, time-controlled, off-peak water tanks, a Refrig., a complete laundry in a three-piece Ensemble, and a lot of What-nots."

"Don't tell me you didn't land it," Robinson almost sobbed, for a three-Digit connected load like That floating out the Window in these times is hard to Take.

"If you have tears to shed," quoted Brown, "bring on your change of vests. It was all mine and the Dotted

line lay there Steaming for a drop of Ink. When Smith gets a Hunch.

" 'I've a good Lodge brother who works for your Company,' said he, 'One of the Big Engineers.' I had Visions of him Asking for the well known Discount, but no, he goes on, 'H. B. Jones, maybe you know him.' "

"I didn't recall his Name among the Vice-presidents and goodness knows that takes in a lot of Overhead. Smith went on to tell me, 'A brilliant fellow and really Up on all this electrical Development, you know. I always ask his advice on electrical Matters. Before I decide on any of this equipment I must ask his opinion.'

"Here's where the Rooting section gets in its dirty work, thinks I, for haven't I read the manager's Message to the Home guard. I suggest we call up Jones right then. I get him on the end of the Line, and Draw back waiting for Results."

"Yes?" breathed Robinson ominously. He feared the Worst.

"Write your own Last line and win the gigantic Limerick contest prize."

"You mean he knocked——"

"No, he wouldn't knock. That's Unethical in an engineer. He just Gave his friend Smith some 'expert' Advice, that was all," and though he wasn't, Brown gave one of those Frenchman's shrugs that explained Everything.

Robinson soaked up the Bitters, sans Gin, for a long time. Finally, "What are we going to do to Educate the Home Folks in the Error of their ways?" he broke down in front of a mere salesman, only Brown was hardly Mere. Brown looked Robinson in the eye kinda Quizzey, reached way down into his past Experience, and Bespake him to wit:

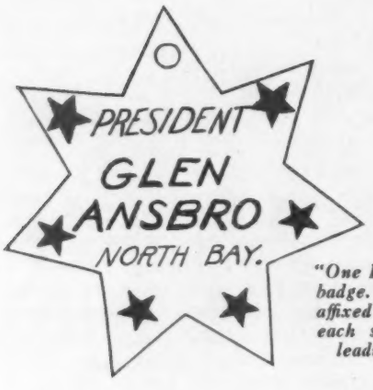
"You're asking me, Robbie? I'm no sales Engineer, get me, not even an Expert. All I do is Sell the stuff that makes Merry-go-rounds out of Meters. Only it occurs to me that what we salesmen have to Suffer would be good Medicine for the Whole Outfit. I mean before us Light Brigade gets ahorseback for the charge on the Noble 400 we all get Drilled up and down the parade ground as to the Whyness of the Chromium by the manufacturers Thereof.

"The boys Upstairs may not be able to attend sales Meetings but they ought to get Theirs out of the magazines, if you can teach 'em to read straight through the Sines and Cosines and out the back Lot into the Ads. And that's where the Manufacturers ought to Tell them, real intimate, if you get me. The first sales Hurdle the Factory has to Hop is the Trade, or should I call it Industry. The Overhead ought to Know, so it can do its Experting from the Sidelines in a Great Big Way.

"Next it wouldn't Hurt any if some of them Upstairs learned to Use some of these Gadgets, now and Then. We salesmen can't sell or demonstrate Sun lamps with a Pale expression and talking from Back East weather bureau Time tables. A good coat of Tan speaks right Up. Ditto a shirt you Ironed Yourself on an ironer Lays the Sales Resistance out Cold."

Moral—If an Expert is supposed to know his Onions, his Breath ought to Prove it.

▼ ▼ ▼



"One Hundred Per Center's" badge. Each small gold star affixed is a year over quota, each silver star a year as leading salesman in the district

Who Said Depression?

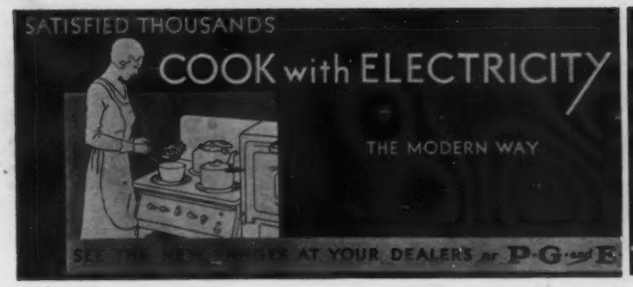
Economists to the Contrary, There Is no Buying Slump in the West; at Least, When a Wide-awake Utility and Aggressive Dealers Join Forces to Wreck Bogeys. Pacific Gas and Electric Co. Range and Water Heater Records Have Just Been Broken!

JUST how important is active dealer participation in a power company campaign? For itself, the Pacific Gas and Electric Co. answers that the dealer can play a big part in making any campaign a success. And especially is it true when the sales-law of averages is readjusted on a downward scale because of lessened buying power and higher sales resistance.

But there isn't any depression when a well coordinated campaign is launched. The California company, according to E. F. Perkins, electrical appliance sales engineer, completed its annual range and water heater drive in July and, with a 66 per cent higher quota than ever before, oversold bogey by a comfortable margain. Of the 1,881 ranges connected, 605 or 32 per cent were company sales, 748 or 40 per cent were sold through dealers, and apartment house sales accounted for 528 or the remaining 28 per cent. Of the 838 water heaters moved, 416

FIVE-YEAR CAMPAIGN RESULTS

Year	Appliance	Quota	Sales	% Quota
1927	Ranges only	372	389	105.0
1928	Ranges	560	1,142	204.0
	Water heaters	280	386	138.0
1929	Ranges	1,000	1,075	107.0
	Water heaters	359	496	142.0
1930	Ranges	1,000	1,052	105.2
	Water heaters	440	656	164.0
1931	Ranges	1,660	1,881	113.4
	Water heaters	700	838	119.7



Two billboard displays which carry the same appeal as other advertising copy. An enlarged advertising appropriation and better coordination aided the campaign. No price was featured, only the idea being sold

were sold through the company and 422 through the dealers—slightly better than the ratio of four heaters to every ten ranges sold which the West averages. The 2,719 units added 5 million kw.-hr. of new load to the system. Who said depression?

By examining the five-year record tabulated, the growth of the annual campaign can be judged.

The first four campaigns included only direct sales, while this year's effort included both direct company and dealer sales. It has been estimated that 80 per cent of the business during the first four years was closed directly by the utility, so the extent of help given the dealers can be ascertained by the readjusted figures.

Campaigns of this character usually include (as did the four previous) special offers to consumers for a limited period as an incentive to "buy now." Such inducements may be price concessions, wiring concessions, trade-in allowances or premiums. But no such bargains were offered this year; only prizes were given to company divisions and merchandise salesmen. All direct sales were made at list prices, standard terms with no allowances or premiums of any kind. It took salesmanship to put this campaign over.

Four factors contributed to its success: dealer help, seasoned sales force, coordinated advertising and employee cooperation.

Just prior to the opening date, in April, a meeting was held in San Francisco to acquaint the dealers with the ramifications of the campaign. Each phase was analyzed and discussed in the selling of the campaign to the sellers of equipment. This policy, with the fact that contractors and dealers had more time this year than before, led to an increase in dealer sales.

The ability and experience of the company's sales force was given a real test during the drive; each of the 32 salesmen was given a quota of 40 units, either range or water heater, and 27 exceeded 100 per cent, the other 5 barely falling short. As an indication of the ability of these 27 under fire, it was found that in previous good years fewer had been "100 Per Centers." In 1930, 18 went over the top; in 1929, only 9; in 1928, only 7; and 2 succeeded in 1927.

The first salesman to sell his quota was made president of the "1931 Hundred Per Cent Club"; Glen Ansbro, of Santa Rosa, won this honor for the second consecutive year. He has sold more than his quota for four of his five years with the company.

Once an exclusive club, 27 salesmen now belong; only five failed of membership. In the picture are the division leaders. Back row, left to right: F. N. Kenyon, Marysville; D. F. Nock, Red Bluff; J. H. Cunningham, Eureka; H. E. Terry, Salinas; F. J. Montgomery, Redwood City. Front row, left to right: J. R. Skellenger, Auburn; J. E. Woolley, Lakeport; Pres. J. G. Ansbro, Santa Rosa; Tom Schofield, Stockton; E. H. Macreading, Placerville

Window displays were standardized for each of the power company offices throughout the campaign. At intervals, the range was replaced by another of different make and the placard changed to one with another point of electric range superiority. The coordination of advertising is suggested by the similarity of the window display to the poster boards above

Each year has brought about greater coordination of advertising. This year, for the first time, advertising included newspaper copy, direct mail, bill inserts, poster boards, truck signs, window and floor displays and employee bulletins, all concentrating on the story of electric cooking.

Employee sales cooperation was featured in the 1928 drive and last year reached a zenith—the company, with its employees helping, sold 1,052 ranges. The officials believe this employee mobilization to be an important factor in the success of its campaigns.

The results of this, the first real P. G. and E dealer campaign, are satisfying to both parties. It offers further proof that joint success is possible—especially in those periods when dealers have more time to devote to a real selling job.

What's Wrong

From Dealers, Manufacturers, Wholesalers and Power Companies Come Diagnoses—Some Denying the Illness, Some Declaring the Patient as Good as Dead. But Most See Room for Improvement and Hope This Symposium Will Show the Direction Appliance Relief Should Take

"WHAT'S the matter with the small appliance business?" editors asked a representative group of retailers, power company merchandise managers, wholesalers and manufacturers. "Nothing" to "Everything" covers the range of answers. Loss in volume of this class of appliance started before depression hit pocketbooks; sales have slumped worse since. Basic factors other than depression lie at the bottom of the trouble. These are brought out in detail in the individual statements which are printed on the pages that follow. Because of space limitations, only a part of the many replies from each of the four groups could be used. Many others, of equal merit and containing pertinent, thoughtful diagnoses, are on file, to be used later if circumstances warrant.

Primary causes of the sad plight of the small appliance as brought out by the study are three in number: First, power companies, with the advent of heavier load-building devices, lost interest in small appliances; their sales promotional efforts ceased; dealers followed suit; today appliances are relegated to the back of the store except in a few instances. Manufacturers have not kept pace with the trend toward modernization, eye-appeal, inspiration; with few exceptions appliances are the same today as they were five years ago—"electrified hardware" one reply calls them. Low-priced, sub-standard appliances distributed through channels such as chain stores, drug stores and the like have hurt public confidence in standard appliances. These are the opinions expressed by the persons interviewed.

Specific questions were asked each group. For instance, Has the saturation point been reached or even approached? The universal answer was "No." Must premiums such as waffle sets, syrup jugs, bread knives or coffee be given to stimulate sales? This produced another negative. Must small appliances be sold on terms? Most dealers insisted that they need not; some power company merchandise managers told of successful campaigns so conducted in the past. Have low-grade, low-priced appliances injured sales? A universal "Yes." Would power company sales promotional advertising stimulate the market? Opinion was divided. Do appliances need modernization? Most of them, yes.

Strangely the subject of discounts, considered by many manufacturers to be a key factor in the problem, aroused little interest from the retailers. Only one, despite a specific question on this subject, made a plea for longer discounts and a better advertising allowance. Wholesalers, on the other hand, stated that proper specialized creative selling necessary to stimulate appliance business could not be done with the margin they received.

Wholesalers protested against direct selling by the manufacturers, objected to lack of protection on obsolescence, decried the amount of obsolete merchandise still on the market which must be disposed of before new appliances can be expetced to move. Merchandise specialization might help but is too costly with present margins.

Manufacturers charged racketeering, blamed much of the trouble on distress merchandise. Dealers and wholesalers have permitted interest in small appliances to lag. Obsolete appliances are still a drug on the market. They urged that neither price nor appearance be sold, but that appliances be merchandised on the basis of their utilitarian value.

Power companies suggested cooperative campaigns to increase sales, stressed the necessity for selling the utility of the appliance, urged more national advertising. They admitted interest is now centered in the heavy load-builders and asked why dealers were not able to maintain the previous volume. "When the utilities stopped campaigning, both central station and dealer sales fell off," one merchandise manager said.

To diagnose the trouble fully one must read the case records of the patient contained in the statements that follow. As for remedies, they too are suggested by the patients. Briefly, they might be summed up in a single phrase: A well rounded market development program in which the utility of the appliances is sold by a united industry.

With the *Small Appliance* Business?

Dealers....

Sub-Standard Appliances Kill Public Confidence

By L. H. Marks
Charles Brown & Sons, San Francisco

OUR business is as good in electrical appliances as it has been for the last two years. While we do not sell as high-priced appliances, I believe we sell more of them,—at least our gross is as great, and if we considered washing machines, would be considerably higher. Our electrical department shows an increase of 20 per cent over last year, including washing machines. However, we noted a very definite undermining in the electrical appliance business from a number of sources, principally by the cutting of prices on standard makes which are nationally advertised, and secondly the advent of a great amount of cheap electrical appliances which carry the same guarantee as the well-known products which are very much higher priced, creating in the minds of customers a doubt as to whether or not they have been paying too much in the past and are being asked too much at the present time for nationally advertised goods.

Many merchants are offering their customers electrical appliances which are so far below the standard that it is breaking the confidence of the consuming public in all electrical devices. The dumping of electrical merchandise on the market, also, in my opinion is quite a factor. New models are being brought out and the old models being dumped at a price far below list. This is particularly true in standard makes, leading the public to believe that there is an abnormal profit made when merchandise is sold at normal prices.

Summing up the situation, it would appear that it would be far better for the manufacturer to sell out a particular model before a new one is introduced and give the retail outlets sufficient time to dispose of their stock and prevent dumping and price-cutting. In addition, it is desirable to have some regulation through city ordinances to prevent merchandise that will not pass proper inspection before being sold.

In the last year or two appliances themselves have not been sold. The only thing that has been sold is price. Quality has been forgotten, and where quality is present public confidence has been lost by the dumping of quality merchandise with the excuse that it is an old model.

Pushed Into Background

By Manager Electric Department
Department Store

CENTERING of interest on large appliances, particularly refrigerators, has certainly pushed the small appliances into the background. We do not feature small appliances as much as we did formerly. Perhaps promotional advertising on the part of the power companies would help stimulate sales again.

We have had success with premiums on waffle irons and toasters. Term selling is not necessary on merchandise of this character.

▼

Sales Are Up 65 Per Cent

By F. F. Brown
Broadway Department Store, Los Angeles

WE CAN answer your question on small appliance business very well since our business has been excellent, some months showing as high as 65 per cent increase over the same months last year. We credit this to our active promotion of new items as often as possible.

▼

Low-Priced Appliances Blamed for Loss

By F. S. Hoover
H. L. Miller Co., Pasadena

WHILE the saturation point has not been reached on small appliances, and while premiums are not necessary, and while terms need not be quoted in making the sale, all this is of little avail because low-grade, low-price appliances have nearly killed the sale of nationally advertised standard appliances.

▼

Cheap Appliances Hurt Electrical Dealers

By Eric Unmack
Westwood Electric Co., San Francisco

SMALL appliances do not seem to move any more. At least, that seems true of the legitimate electric dealer, for what are we to do when a large department store with an unusually large volume of appliance sales opens a new branch, and in the announcing advertisement features a toaster at $1? Firms with policies such as that are at least one angle of the trouble.

We believe that small appliances must be sold on terms if they are to be sold.

New Inspiration Needed

By E. N. Johnston
Brown-Johnston, Spokane

IN my opinion the small appliance business is suffering from a dearth of new ideas. Electrical manufacturers, distributors and dealers have been content to plug along with old merchandise, whereas the radical competition that has developed during this depression has brought out new lines of thought in most every other commercial enterprise.

We have found that the few new electrical appliance items that we have been able to offer to the public have been particularly good sellers, whereas the older ones are fairly glued to the shelves. We need new inspiration in the designing and application of electrical appliances. We need new inspiration in merchandising them, such as other items in other lines are receiving. They should not be given away free with washing machines or some other major appliance. They should not be sold at 10 c. down and 10 c. per month on the customer's light bill. The small electrical appliance must serve a new purpose; be displayed attractively; be merchandised on a sound, appealing basis; and then there will be no complaint for anyone.

▼

Sell on Open Account

By Appliance Manager
Furniture Company

OUR store caters to a large high-class trade and our appliance sales have not been affected materially by the so-called sub-standard cheap appliances. Small appliances need not be sold on terms but we have found it desirable to add an appliance purchase on the customer's regular installment account without increasing the amount of the monthly payments. From our standpoint margins are satisfactory and the present line of appliances adequate. Our sales of urns and urn sets might indicate that saturation has been reached on this appliance.

▼

Lower Prices Necessary

By E. A. Norton
Barker Bros., Inc., Los Angeles

THE small appliance field is far from being saturated. To offer premiums with small appliances is nothing more than a price concession and such tactics as this will no longer fool the public. Prices of standard ap-

ELECTRIC CLOCK
$1.95
FULLY GUARANTEED
ELECTRIC TOASTER
$1.00
ELECTRIC TOASTER
$8.95
A Waffle Iron, Sandwich Toaster & Double Hot Plate
All In One $3.95
A new electric appliance of outstanding value. You can easily change it into a waffle iron, a sandwich toaster or a double hot plate. An excellent gift for your friends or for your own home! Feature priced $3.95 complete. Phone TRinity 1331 or come in and see it demonstrated.
Electric Percolat
$1.00
$1.65
ELECTRIC HOTPLATE
89c
ELECTRIC WAFFLE IRON
$2.95
Iron
$3.95
Reg. 1.39 ELECTRIC TOASTER
Minute Man toaster: well constructed. Toasts two slices of bread in less than 2 minutes.
98c
ELECTRIC IRONS
—With Cord

pliances are out of line with 1931 conditions. The old-fashioned, old-timers are hard to change, but the makers of non-electrical merchandise have realized that the buying public has changed its attitude and has met this new situation with renewed costs.

▼

Obsolescence, Price-Cutting Need Remedies

By L. O. WETZEL..
Kuster-Wetzel Electric Co., Long Beach

ALL business is down and appliances suffer similarly. Because electrical wares are classed as luxuries, the public is not buying until it is certain of its security.

Cheap merchandise cuts into sales of standard lines a little, but it is in price-slashing of standard lines that the evil lies. Manufacturers may get more volume, but they suffer in the dealer's estimation and should watch the market more closely. When a large order comes in, even from a "blind," manufacturers must know that prices will be cut to insure the sale of every piece.

Obsolescence should be a lesser evil than it is. Margins are now satisfactory if the fear of being caught with old stock could be removed. More protection to the small dealer on this matter would mean that he would carry a larger, more complete line of appliances; this would tend to increase his value as an outlet and both manufacturer and dealer would make more money. It is just as easy and less expensive to sell a good article.

▼

"Ask Them to Buy"

By A. L. STONE..
Stone Electric Supply Co., Los Angeles

THE appliance business, for me, is better than ever before. I see no complaint to make; the better-class public wants good merchandise and can pay for it. It is merely a matter of getting to them with a sales story, and then following the slogan of a lamp company: Ask them to buy.

With most contractor-dealers, the two departments are separate. At any one time the man is either a contractor or a dealer, but never both. As a matter of fact, I find that the best leads I get for selling merchandise are from my contracting jobs. If a house is being rewired, or improvements are being made, why not sell appliances right then? The very cost of the item will seem smaller and the sale will be easier. You have already sold the customer on your contracting ability; to sell your merchandising service will be simple.

Incidentally, dealers cannot compete with chain-store prices, but they can sell service. That is the biggest stock in trade. And they do sell better merchandise, and the people who buy cheap merchandise probably would not buy the better article. The market is still open to any dealer who wants to sell and push his merchandise, although most dealers carry very little stock to push. Standard business practices solve any other questions which arise.

▼

Appliances Should Be Sold as Novelties

By P. E. FISHER
Parmalee-Dohrmann Co., Long Beach

SALES of appliances to date are higher than in 1930, though not so high as the best years. The business is picking up, however.

Price wars by merchandisers and price-cutting by manufacturers are a reason for any decline in volume, for these destroy the confidence and sales ability of the regular outlets. We find it necessary to remove such stock from our shelves during price slashes, obviating any chance of moving such an appliance. The majority of outlets follow the same practice.

The day of expensive electrical merchandise is gone. Staples always should be carried in stock, but because an appliance is something of a novelty, it should be merchandised as a novelty. Too many stores lose sight of this fact.

Cheap merchandise hurts legitimate business very little because it caters to a different class of people. It is like selling cheap dinnerware in 5 and 10 cent stores; there is still a big market for good china to the better class of people. Those who sell cheap merchandise are losing out rapidly.

Obsolescence doesn't worry us for we move the stock rapidly enough; the need for modernization is not apparent.

▼

Educate the Salespeople

By A DEPARTMENT STORE BUYER

APPLIANCE volume is only slightly if any off from previous years. Department stores are in a good position. There is nothing glaringly the matter with business if stores will put some thought and work into selling.

Cheap appliances do destroy the trade for good appliances, but department stores must and do meet this competition with kind. It is the only method of getting sales volume and profit. Also, if a standard article is cut in price, the policy of the store demands that the price be met. We are never undersold in this town.

Premiums never help a sale unless the salesmanship is poor. Education of the salespeople is the real job to be done. By making them more familiar with the product they sell, they can do a better job and invite confidence and respect from the customer.

▼

Utility Must Be Sold

BY LOUIS LEVY
Levy Electric Co., San Francisco

I am satisfied that for the past six months or a year the demand for small appliances has fallen because the public is not buying any items that it can do without, no matter how low the price may be. Central station advertising might help to recreate the demand. However, it will not be productive of results unless it shows how the appliance will reduce the cost of living.

Until two years ago low-grade goods helped the standard advertised article, but lately price is *helping* to sell what few goods are sold. Terms are not needed but sometimes help to close a sale if offered. The saturation point has not been reached and premiums are not necessary.

I reiterate, no matter how low-priced the article may be, the public will not buy except to help reduce living expenses.

▼

No Decrease in Volume; New Channels Opened

By D. D. MACFARLAND
Newbery Electric Corp., Los Angeles

IN MY judgment, the same volume of business is being done in the small appliance market as before; the difference is that sales are now being made through other channels than the legitimate dealer. Especially are department stores and jewelry stores active. The competition from the former is fair for they usually feature an item at the regular price. The advantage is in advertising; each department takes a portion of a double-page spread, and a small bit of advertising in such a spread is almost certain to be noticed. An individual ad of the same type by a dealer would pass almost unnoticed.

Cut-rate jewelry stores, however, cut prices on standard items to bring cus-

tomers into the store. The article is sold only on terms, thus necessitating the customer's appearance time and again at the store and giving the salesman an opportunity to sell an item of jewelry on which profits run to 300 per cent or more. This competition is not worth while.

If a dealer can afford to give a premium with an appliance, he should lower the price; premiums cheapen the article, destroy the effect of good publicity by implying that something must be given for nothing to move the item. No new designs are needed, but sales promotional advertising by power companies locally might have a good effect. The point is debatable.

Terms are not absolutely necessary for when a customer buys from an electrical store, he is not thinking in terms of bargains. Moreover, the usual dealer is not set up to give terms advantageously.

▼

Manufacturers Not Up-to-Date

By J. C. Hobrecht
J. C. Hobrecht Co., Sacramento

HERE are my answers to your question, "What is wrong with the small appliance business?" First, lack of the proper kind of advertising; second, cheap sub-standard goods which have swamped the market, principally through the non-electric stores; and third, the so-called standard manufacturers have not kept up-to-date on many items.

The remedies I believe to be: First, national advertising by the manufacturers and a percentage allowance to the dealers to be spent for approved advertising; second, preferential discounts to the dealers who stock complete electrical lines and do not put them in competition with non-electrical items in the same store; and third, standard manufacturers might get together and create new designs, not all alike, but following a definite trend. By design patterns they could prevent copying by the cheap and irresponsible manufacturers. Incidentally, all late innovations in electrical devices for the home have been pioneered by the small independent; the big fellow is evidently hibernating.

The saturation point has not been reached on small appliances and, while premiums are not necessary, terms must be quoted to help sales. We find plenty of competition in the low-grade, long-discount lines which are featured.

Wholesalers....

Appliances Are Not Motors

By B. S. Manuel
Westinghouse Electric Supply Co., Los Angeles

SOMETIMES I am inclined to believe that the principal difficulty lies in the fact that the major manufacturers are still trying to market appliances in the same way they marketed induction motors and steam turbines. They fail to give support on obsolescence; they do not protect wholesalers against direct selling; and they do not attempt to interest the dealers in the small appliance business.

Specialization by the wholesaler, as on radio, would probably increase the volume of business, but the margin of discount would not justify this.

▼

Margins Are Too Low

By Ray Bygel
United Electric Supply Co., Sant Lake City

NEITHER distributor nor dealer is afforded a margin of profit necessary to make the small appliance business profitable to him, with the natural result that both are placing their efforts behind such lines as radio, refrigerators, washers, etc. This not only affords large unit sales and a greater volume of business, but a margin of profit which justifies specialized selling effort. Manufacturers of small appliances do not give support on obsolescence and they sell directly at discounts which are unprofitable to us as a distributor.

▼

Dollar Appliances Ruinous

By W. C. Wurfel
Electric Supplies Distributing Co., San Diego

FIRST, let me answer your questions.

1. Do the manufacturers give you adequate support on obsolescence? No.

2. Are jobbers properly protected against direct selling? No.

3. Would specialization by the wholesaler increase the volume of business? I doubt that satisfactory results could be secured.

4. What reaction do your salesmen get from the dealers? The average dealer's comment is that he cannot compete with drug stores, department stores, and in many cases hardware stores, because of the very poor products handled by them at ridiculously low prices; however, the average electrical dealer has not as yet learned the art of merchandising.

5. Are appliances in need of modernization? We scarcely think so as the more reliable manufacturers are keeping abreast with the times.

Let me submit the following as pertaining to the situation. During the past few years there has been a decided increase in the number of appliance manufacturers. Anxious to develop a volume of business, they have gone directly to the dealers, thereby increasing the wholesalers' competition. This has had a tendency to help saturate the territory, although a number of manufacturers do not consider it very seriously.

If the electrical industry were properly organized and controlled, the Underwriters could be prevailed upon to eliminate the manufacture and distribution of poorly constructed appliances, many of which are on the market today and are being sold at a retail price of $1 or less. The public, once it has had experience with such articles, is discouraged in the use of other electrical appliances and the general tendency is to undermine confidence in all electrical appliances. The time has arrived when public confidence will have to be stimulated and renewed by organized industry advertising, the large part of which should be probably local in nature. The lead must be taken by local power companies as they seem to have the confidence of the public to a greater degree than any other merchandising organization.

▼

Market Glutted With Obsolete Appliances

By T. E. Miller
Home Electric Co., Tacoma

THERE have been so many campaigns on appliances in the last couple of years that dealers and jobbers have many of these which do not move and are really dead stock. At present, they are all trying to get rid of this stock of appliances. Also, the manufacturers of appliances have increased their models until it has reached the point where no dealer or jobber can anticipate how to purchase in advance. A representative stock of all models must be carried to satisfy the customer, and non-moving stock thus accumulates.

Manufacturers do not give adequate support to obsolescence. They are continually coming out with new numbers and changing or discontinuing others.

New Electric Cooker $5.95
Cook a whole meal in this electric cooker at the same time. Large compartment for meat and smaller ones for potatoes and vegetable. Two heats—high and low. Fully guaranteed.
GUARANTEED ELECTRIC WAFFLE IRON
Reg. $7.00 $2.95
Electric Percolator
6 Cup. Reg. $15.00 $7.95
ELECTRIC HEATING PAD, reg. $6. 3-heat $3.55
ELECTRIC STOVE 89c Complete
ELECTRIC Reg. $3.95 $2.95
ELECTRIC Waffle Iron Reg. $17.00 $2.95
ELECTRIC CLOCK $1.95 Complete
Reg. $2.49
ELECTRIC IRON (Less Cord) $1.00
ON SALE THURSDAY
Just 150 Electric Waffle Irons
$4.49 each
(See our larger Advertisement on Page 7)
Guaranteed Electric 1-Burner Stove, $1
Handy for hotel room use, week-end trips or for traveling. Cord attached. Boils, toasts, fries, warms up canned foods.
ELECTRIC De Luxe Toast-Over Toaster
$4.75
SALE PRICE
Reg. $8.00
ELECTRIC CURLING
$1.49
ELECTRIC 3-HEAT HEATING PAD
$3.55
ELECTRIC PLAY IRON
$2.95

They do not allow the dealer any allowance on items discontinued and do not allow credit on items reduced in price. We think this has quite a bearing on the situation. Many manufacturers are selling direct to the dealers, especially at this time when there is not a large volume of business to be had through a distributor. Prices quoted are the distributor's prices, though this is generally on off-brand material.

▼

Dealers Must Merchandise

By H. L. Frazier
Union Electric Co., Oakland

OUR appliance business is holding up very satisfactorily and we attribute this to proved quality at popular prices. The lines are kept alive with new items and the smaller dealer is placed in a position to handle time sales by giving him the same margin of profit as the department stores have always insisted on having. Our factories have been through the epidemic of direct selling and appear to be cured of such inclinations. We do find direct selling on the part of a number of factories still existing and harmful, however.

If we could educate our dealers to department store methods of merchandising, the appliance business could easily be trebled. Since the education would benefit all electrical manufacturers, the expense of it could be borne by everyone.

▼

Approved Merchandise Needed

By J. F. Kathriner
General Sales Corp., San Francisco

THE trouble seems to be that the market is flooded with cheap, inferior merchandise, all of which has been sold to merchants and passed on to an unsuspecting bargain-hunting public, causing the public to lose confidence in good merchandise. The dealers are more or less disgusted with the small appliance business because every manufacturer is trying to see how cheaply he can make them. The result is that there are too many come-backs.

Power company merchandising would do nothing but antagonize the retailer at this time, so the only thing to do is for legitimate manufacturers to have appliances approved by the Underwriters and to have dealers feature such tagged and approved merchandise.

▼

Modernization Necessary

By Harry E. Perl
State Electric Supply, Ltd., Oakland

MANUFACTURERS fail to give support on obsolescence, and jobbers have become over-conservative in buying. A real trouble is this, however: There are only a few good lines which the manufacturers do not sell direct in some form or another. In the past the department store business was very desirable, but now they buy direct. The small dealer claims he can't sell in competition with the department stores and so he will not stock appliances. So it is impossible to sell either the department store or the dealer.

Specialization by the wholesaler on appliances would probably increase the sales, but we believe the added sales expense would more than offset the profits made. Our salesmen find that dealers are very skeptical of the small appliance business. They are always talking about the department stores and how the appliance business has fallen off. Yet, if the dealer will resort to department store methods, a little advertising, some sales effort, window displays, etc., he might meet with some of the department store success.

Appliances are in need of modernization, and by this is meant modernization in design as well as in principle and use. Sales resistance to modern appliances is far less than to others.

▼

Market Needs Stimulation

By M. S. Meyer
M. Seller Co., San Francisco

DEALERS, because of lack of business, have become rather stagnant on appliances and are not putting forth the effort that this line deserves. The same is true of wholesale distributors. Power companies should aggressively go after the small appliance business to stimulate the interest of the dealers, but in all cases the power company should tie in with the local dealers in such a campaign and establish retail prices which should not be cut.

Revision of prices which have been made since July 1 should improve conditions during the fall season.

▼

Manufacturers and Manufacturers' Representatives

Must Display Appliances

By George H. Watson
Manning, Bowman & Co., San Francisco

NEW items have been a good stimulant this year with some price attraction in the form of revision of list prices, but most manufacturers are about through with revising their list prices and the tendency is to stiffen up a little to force a market in the retail channels. A great deal of the distress merchandise has been disposed of, which will make for a healthier condition. A concentrated effort on the part of wholesalers and retailers in the matter of consumer education similar to the great effort that has been put behind major appliances would put the small appliance business back where it belongs. Many small appliances have good consumer acceptance, but if they are not shown and talked about, competition being what it is, they will be forgotten. They must be talked about as they cannot speak for themselves.

▼

Small Appliances Pushed Into Background

By R. J. Cordiner
Edison General Electric Appliance Co., San Francisco

IT appears as though the manufacturer and wholesaler of appliances have been lax in their sales presentation of the subject in the past number of months. With the advent of new major appliances, such as radio and refrigerators, the retail outlet has given all its most attractive display space to these, relegating the small electric appliance to the back of the store, in many cases in a poorly lighted space and certainly inaccessible to the customer. Manufacturers and wholesale representatives selling these major appliances have convinced the dealer of the importance of adequate and proper display, to the detriment of the small appliance. This can properly be overcome if the dealer is again to be sold on the fundamental story behind the sale of small appliances, the question of profit on invested capital and turnover in ratio to display and sales aggressiveness.

One central station on the Pacific Coast recently sold some 350 hot plates, retailing at $9.95, through merely having one demonstrator spend her entire time putting on demonstrations in eight different stores. When this special display and demonstration was withdrawn, the normal sale decreased to less than 50 a month, even though other conditions were similarly ideal.

To counteract the story of saturation, may we present this. In Spokane, where through an actual survey the fact was established in 1929 that there was 112 per cent saturation of electric irons, the market during 1930 and 1931 has been equal to that of former years. It merely means that, while customers already have an appliance, they will gladly buy an improved model if it suits their need.

Wholesalers Are Lax

By George White
Utility Electric Co., St. Louis, Mo.

DEALERS are still pushing small appliances but they are using cheap, low-grade offerings and cutting prices. Wholesalers, on the other hand, are not giving the business adequate support, but are frantically endeavoring to work off old stock and are not buying improved late items. Power company merchandising would probably stimulate the market.

▼

Obsolete Stocks Hurt

By P. F. Ross
A. J. Lindemann & Hoverson Co., Milwaukee, Wis.

OUR comments on the ailments of the small appliance business are these:

1. Large stocks of obsolete nickel-plated appliances offered at bargain prices.

2. Bankrupt stocks purchased by racket stores and sold at bargain prices.

3. Cheaply constructed, low-price appliances marketed by racket stores, cut-rate drug and jewelry stores, have arrested the sale of honestly built and highly efficient appliances.

A suggested remedy might be power company newspaper advertising campaigns, cooperative with legitimate dealers, to teach the public the adaptability, convenience and economy of time and effort in the use of safe, reliable and efficient appliances.

Power Companies...

General Campaign Needed

By R. E. Fisher
Pacific Gas and Electric Co., San Francisco

PURCHASERS of small electric appliances do not use them as frequently as they intended when they were purchased; they are usually put on some shelf and somewhat forgotten. Consequently, members of the family and visitors do not see the appliance frequently enough to become impressed with its utility. Lowering of the price would probably not increase the sale because designs have been continuously improved during the past few years and the prices cheapened so that even the highest class of merchandise can be purchased at reasonable prices.

However, what is needed is a general advertising campaign that will call attention not particularly to the appliances themselves but to what they may accomplish, and arouse a desire in the home owners to have them and keep them in use. A mass advertising campaign on the appliances themselves would be valuable; this campaign could be a combination of all branches of the industry. For instance, during January all advertisements which feature percolators and all window displays in nearly every dealer, hardware, and department store would include a tie-in display. Thus practically the entire public at one time would see percolators everywhere and have them continuously called to attention for a period of 30 days. By the end of this time it is quite certain that a sufficient interest in them would have been aroused so that large sales would result.

The following month another item could be used and so on for each of the twelve months.

Another good idea would be tie-in campaigns in the advertising of various foods; with the coffee people on percolators, the bakers and butter people, the jam and jelly manufacturers, etc., on toasters, and similar tie-ins with any article outside of the appliance itself that can be used with the appliance.

All campaigns should be conducted along the lines of what the appliance will do, however, rather than on the appliance itself.

▼

Wants Diligent Salesmanship

By G. B. Buck
Public Service Co. of Colorado, Denver

THERE is nothing the matter with the small appliance business. Potentially, there is as much or more business than ever before; customer acceptance is better than at any time during the past. All that is needed is diligent salesmanship and plenty of hard work. A revival can be brought about by modern, up-to-date merchandising methods, based primarily on constant, individual customer contact. More keen and intelligent consideration should be given this bread-and-butter class of merchandise.

▼

Must Be Redesigned

By H. C. Rice
Southern California Edison Co. Ltd., Los Angeles

PRIMARILY, the trouble lies in the present economic situation. People are not buying specialties now, and all electrical appliances, with the exception of irons, come under that heading. Secondly, there has been a general loss of interest by manufacturers, distributors and utilities in furthering the sale of small appliances because of the increased cost of advertising and promoting them.

Two things could be done to revive public interest:

1. A concentrated drive to restore usefulness to the appliances now in the hands of the public through publication of fixed prices on repairs.

2. Establishment of service departments in the dealers', hardware merchants' and utilities' stores qualified to make rapid and satisfactory repairs. Prices will have to be nominal.

This will arouse public interest in appliances now sold and will result in the sale of many new devices and the discarding of others not worth repairing.

Manufacturers must re-design many items in the line. Electrical appliances are the only items now offered the public which look like the original ones created when the industry was young.

▼

Power Company Holds Key

By O. S. Clifford
Sierra Pacific Power Co., Reno

THE power company is the key to the situation and a continuous campaign should be started for the sale of these very important small appliances. The other outlets should aid in the selling campaign. New models and new low prices would help greatly.

Power companies have been so active during the past few years in building up the sale of the appliances which consume the most electricity that the small appliance business has been forgotten. Unless these are continuously pushed by the power company, the business will continue to disappear because the other outlets apparently are not able to get sufficient distribution by themselves.

▼

Must Talk Appliances

By R. B. McElroy
The Washington Water Power Co., Spokane

OUR appliance business is not alarmingly off. The small decrease is not more than might be expected with present economic conditions. However, we realized last fall that the selling era was changing from a seller's to a buyer's market; consequently, we spent much time and effort in educating our salespeople to talk appliances to all customers. As soon as this plan was followed, our sales stepped up.

▼

Need More Sales Impetus

By V. H. Moon
Pacific Power & Light Co., Portland

SMALL appliances have not received the sales impetus that is necessary nowadays to secure good results. Furthermore, it is probably impractical to attempt to put the pressure behind them that they need. Small appliances are sold more like staples than are the large specialties. For example, cur iron business is off 50 per cent from last year, and if there is a demand article in the electric appliance field it is the iron. We have been able to offer attractive deals in two campaigns; the deals in the past have secured a good volume of business. Neither effort was successful.

By adopting different methods of selling we might be able to boost small appliances, but this would be taking away from the larger items which proce more revenue. It does not seem practical. Better offers by the manufacturer and harder work by the retailer may help.

3 Companies That Supply Range Wiring

— What They Think of It
— How Dealers Benefit

California Oregon Power Co.

Mountain States Power Co.

ALL ELECTRIC ranges sold in the territory served by The California Oregon Power Co. and Mountain States Power Co. since May 1, 1931, whether sold by the companies or by dealers, have been offered without cost for wiring or installation. This has been accomplished by the simple process of using a portable range wiring unit and capitalizing this unit installed, just as the cost of meters, peak limiters or other measuring or control devices installed on the customer's premises are capitalized.

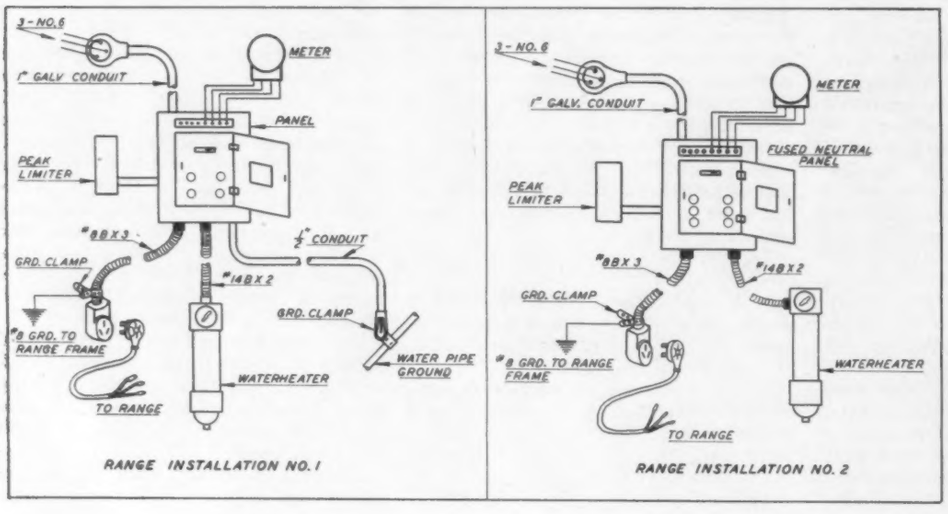
EVOLUTION

The process through which this plan has been evolved is interesting. It grew out of an attempt in 1929 to solve the problem of simplifying the sale of ranges to renters, where a sale was frequently thwarted because the landlord would not stand the expense of wiring for the tenant, and the tenant was unwilling to make an investment in wiring from which he could not benefit permanently. After some experimentation, a portable wiring unit meeting code requirements was developed, which could be sold to the tenant for somewhat less than a permanent job, and which was capable of being moved economically with the tenant as he changed his place of residence. If the purchaser moved entirely out of the territory the portable wiring unit could be removed and taken back from him at a figure but slightly less than the original price. At least this was the theory on which the scheme was based, though in actual practice it was seldom found necessary to move the portable unit once it was installed. (ELECTRICAL WEST, Oct. 1, 1930, p. 183.)

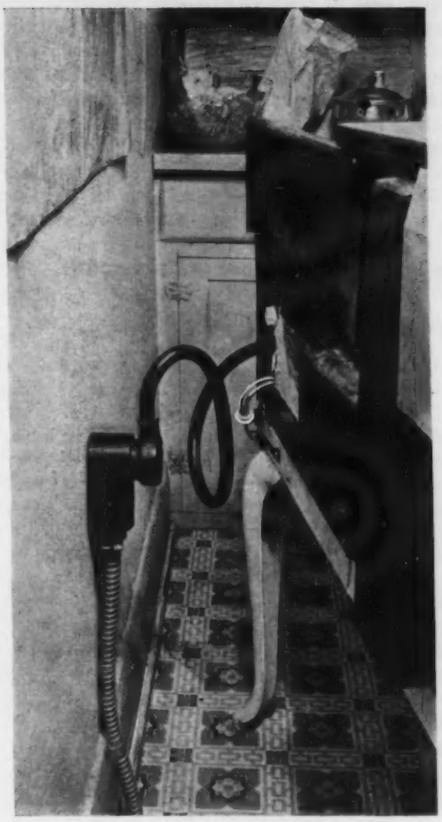
This plan, put into effect in 1930, fulfilled its original purpose reasonably well; that is, it helped solve the problem of selling ranges in rented houses. But it was soon seen that the portable wiring unit had larger possibilities and greater load-building values.

With the simultaneous approach of a fairly high range saturation and a serious business depression, it was discovered that the price of an electric range installation represented a real resistance to volume of sales. Ways and means of lowering this price involved principally finding a way of reducing or removing the cost of wiring, which was ever present as a major resistance. Other companies had tried, with considerable stimulating effect, offering free wiring, either as a premium entering into the "cost of merchandise sales," or through the process of charging the cost of the wiring to "capital." The latter idea appealed most in a consideration of this question by the California Oregon and Mountain States companies, since it eliminated all possibility of the charge of discrimination between customers, and since it lent itself admirably to stimulating other dealers to active participation in the electric range business, thus securing the load-building benefit of a number of aggressive outlets in addition to the effort of the companies.

But a major factor entering into the decision to capitalize range wiring was found in the adaptability to this purpose of the portable wiring unit. Wiring diagrams



Range installation No. 1 is the solid neutral for urban attachment where an approved ground can be had. Range installation No. 2 is the fused neutral for rural attachment where approved ground cannot be secured



Right—Outdoor installation of a portable range wiring unit issued by California Oregon Power Co. Meter and peak limiter are in the closed box

Left—Because of the simplicity of attachments, the range can be connected by the drayman who delivers it by merely inserting the plug in the receptacle

Right—This installation was made for a new house. The unattached loop is for the peak limiter if a water heater is later installed

and specifications of this unit are shown for installations having a bare solid neutral for locations where an approved ground can be secured, and having a fused neutral for other locations. These diagrams indicate how the wiring is simply and quickly assembled from standard wiring materials into a unit of electrical equipment in itself meeting code standards, which can be easily installed in plain view with screws, and as easily be removed without leaving irreparable damage to the premises. Having, after assembly, all the appearance of a piece of packaged goods, the unit is readily identifiable as to ownership, and in short, for meeting the legal, physical and mechanical requirements of the situation, it possesses the qualities of unity, visibility when installed, identity, portability and flexibility, which other types of wiring embedded and fixed within the walls do not possess. Accompanying photographs of actual installations illustrate these qualities.

It was decided then to install this portable wiring unit without charge—capitalizing the cost—for every customer desiring this installation in preference to a more permanent type of wiring, for which he would have to pay.

Plan

In every case of a request for an installation of this capitalized unit, whether the range is sold by the company or by a dealer, the company takes an agreement signed by the purchaser of the range. If such purchaser is a renter the agreement is also signed by the owner of the property in which the wiring is to be installed. This agreement, which establishes the company's ownership of the wiring, reads as follows:

RANGE WIRING INSTALLATION AGREEMENT

..... Date..... 193....

The undersigned, having applied to The California Oregon Power Co. for electric service for range hereby requests The California Oregon Power Co. to furnish all wiring and equipment necessary for said service up to point of connection with said range, and in consideration of The California Oregon Power Co. furnishing said wiring and equipment, it is agreed:

That The California Oregon Power Co. shall have the right and privilege to attach as may be required said wiring and equipment to the building at said premises and in and through the interior thereof; none of said wires or equipment shall be considered as a fixture in or to said building and title to the same shall at all times remain in The California Oregon Power Co. with the right and privilege to go upon the premises at any reasonable time for installing, repairing or removing the same; the same may be removed entirely from the premises upon discontinuation for any reason of service for said range; no one shall undertake to change, tamper with or repair any of said wires and equipment without the consent of the power company.

Said The California Oregon Power Co. shall not be held to be liable or responsible on account of the installation and maintenance of said wires and equipment beyond the liability of an ordinary licensee.

.....
Tenant.

.....
Owner of Property.

On executing this agreement the customer is given his choice as to what wiring contractor he desires to make the installation. If he has no choice the seller of the range turns the job over to one of the contractors regularly doing such work for the seller, and, in the case of the ranges sold by the company, these jobs are rotated among all the established contractors in the community. The contractor then draws from the company stock the cabinet box and the plug connection, taking from his own stock the rest of the material necessary to assemble the unit in accordance with the standard specifications. Thus all manufacturers and jobbers of standard wiring materials doing business in the territory have an opportunity to participate in the business created by the range selling activities of the company and the dealers, and stimulated

by the company policy of permitting the customer to receive his wiring installation without cost.

On completion of the work, the contractor bills the company with an agreed fixed charge, which has been found from experience ample to cover the cost of the material and labor furnished by the contractor and yield him a substantial profit on the average job. There is, of course, a slight variation in the cost of these jobs to the contractor, depending on the length of run and on other conditions. But the agreed price is sufficient to cover the cost under the most adverse of conditions and to yield a profit on all other jobs, so that the total of the jobs received by any one contractor over a period of time yields him a satisfactory profit on this class of work. Where the cost of bringing existing lighting circuits to the new cabinet is substantial, the customer is asked to pay the contractor direct for this portion of the job.

RESULTS

This policy of the companies of allowing range wiring without cost through the capitalization of the portable wiring unit has not been in effect long enough to provide comparative figures indicating its definite effect on range sales in the territory, but in general it is noted that the company sales since May 1 this year have equaled, under somewhat worse conditions of depression, the sales in the same period of 1930, and that sales made by dealers in the territory have increased. In addition, a number of new dealers have entered actively into the electric range business, finding that the removal of the wiring bugaboo has so simplified range selling that this device has assumed a comparable position, from a merchandising standpoint, with other merchandise they handle.

The Washington Water Power Co.

EARLY in the year we came to the conclusion that free wiring was an outstanding inducement to assist in keeping up our range sales volume. We further realized that to offer free wiring without considering our dealers would put them out of the range business during these campaigns as well as deprive us of the benefits of their cooperation. When we were ready to start another campaign we invited those dealers who actively stocked and promoted the sale of electric ranges to meet with us to see what could be done toward making it possible for them to make the free wiring offer to their customers.

At this meeting it was brought out that the average cost of wiring for an electric range and water heater in our territory was approximately $40. The dealers felt that some financial assistance towards their wiring should be given by us, which we realized to be true. The question then was to determine how much of the $40 we should pay. At their request, it was decided they could cooperate in this free wiring campaign if we would agree to pay $25 toward each wiring installation they were required to make. They arrived at this figure in the belief that no further campaign inducement other than free wiring would be necessary. In other words, in the past activities they conducted, certain premiums or price reductions were made during specified selling periods. The concessions usually amounted to approximately $15 per sale and were not nearly as effective as free wiring. They were more than willing to contribute toward the wiring an amount which would approximately equal any concession they had made in the past.

Two campaigns have been conducted this year in which free wiring for ranges and water heaters was offered, with the dealers participating and making the same offer. The first campaign ran for six weeks in the spring and the second for eight weeks during the summer. In both of these campaigns quotas were set up on the same basis as formerly, and in both campaigns the combined sales of the dealers and ourselves were more than the established quotas. It is interesting to note that dealer sales during these campaigns equaled 25 per cent of the sales made by the company, which is a larger percentage of dealer sales than had occurred in previous range campaigns promoted by the company. The dealers have expressed satisfaction with this arrangement since it has been the means of increasing their volume in electric range business, and the company has secured the advantage of a larger range load than would have been possible had the company alone been engaged in the activity.

Other Plans Under Consideration

Impelled by the desire to remove the electric range's chief sales obstacle, several other companies are doing considerable investigating of the possibilities of similar plans. Not long ago the Southern California Edison Co. Ltd. came to an agreement with contractor-dealers over their system for a standard range wiring price of $40, a step in the direction of placing the matter upon a basis of uniformity. Similar arrangements have been sought by the Pacific Gas and Electric Co. and other utilities. One utility, through the auspices of a cooperative league, is seeking to bring all four branches of the industry into a short-term range drive, each contributing a portion of its profit and thereby creating a sum which can be applied to the wiring. Thus for a limited period instead of premiums or price concessions the special offer of the campaign would be the installation free.

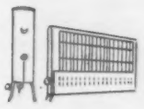
Chief objection to the offering of wiring with the range comes from the contractors, on the ground that if the initial wiring for a range is offered a consumer without cost, when that customer moves to a new location and requires wiring installed to serve the range, the contractor charging a legitimate price for such an installation is made to appear to be outrageously overcharging. Thus the entire brunt of the onus of wiring cost is loaded upon the contractor, placing him in a decidedly unfavorable position with his customers.

This objection no doubt could be overcome by the utility wishing to remove this sales obstacle if it carried its offer to finance the range wiring of any customer moving to a new location. At first blush perhaps this seems a far-fetched concession, since the range already is sold. Yet if it is difficult for a customer to continue to use an electric range because of moving to a new location, competing fuels are very likely to take advantage of the situation and the loss of the load becomes permanent. Justified on a basis of maintaining existing load, therefore, the proposition is not an altogether intolerable one. Keeping good load sometimes costs less than does the creating of new load.

Furthermore, every electric utility should look forward to the day, even as did the gas utilities of a few years ago with respect to piping for gas, when a large proportion if not all of the houses in a community will be wired for a range, even those not originally built with wiring installed. To hasten this movement a standard range outlet is a prime necessity on every range installation. A standard range plug should be supplied on each range. Imagine the stagnation which would have resulted with smaller appliances had not the industry standardized on a simple, detachable, two-prong plug and convenience outlet for all appliances.

Any stimulus, even if artificial and forced, seems justified in the effort to bring the range to such a degree of acceptance that builders will install wiring for them as a matter of course. When that day arrives the utilities no longer will need to be so energetic in range campaigns, dealers will sell more, and the entire standard of wiring of homes should have improved measurably.

New Possibilities
in
Off-Peak Water Heating



AFTER a study of some months' duration involving an analysis of experience with high-voltage water heaters on a meter rate and low-wattage heaters on flat rate, and involving also additional experiments with various types of heaters, tanks and insulation, the Puget Sound Power & Light Co., Seattle, has established a new water heating rate offering low priced energy on off-peak hours for storage-type water heaters. The off-period set for the company's daily peak is controlled by a synchronous, self-starting clock time switch and the rate is 8 mills per kilowatt-hour straight, with a one dollar minimum.

Because the rate is unique in many respects and because in itself it tells a rather complete story, it is quoted herewith in full:

THE RATE
WATER HEATING SERVICE

(Off-peak, single phase, 60 cycle, alternating current at a nominal potential of 120/240 volts.)

Availability

1. This service is available for a maximum of 18 hours' use per day.
2. The company will furnish, connect to the customer's wiring and retain ownership of a suitable time switch to regulate the hours of use.
3. The service shall be metered on a circuit which shall include all of the heaters for one or more storage tanks but exclude all other service.
4. Service under this schedule may be limited to 5-kw. capacity, at the company's option, and the heater capacity shall not exceed 60 watts per gallon of storage tank capacity. Heating installations in excess of 1 kw. shall consist of two elements, each to be protected by a thermostat. One element shall be placed to heat the whole tank and the other to heat the upper half of the tank. The capacity of the upper element shall not exceed twice that of the lower element.
5. To provide adequate and economical hot water service for the customer, the tank, and heater if external, shall be covered with sufficient heat insulation, as approved by the company.

Rate

0.8c. per kw.-hr.

Minimum Charge

$1 per month.

Commenting on the advantages to the company and the customer alike of off-peak controlled service as against flat-rate service, Samuel P. MacFadden, vice-president, says:

"The customer can be given adequate hot water service for his peak requirements without being penalized by flat-rate charges. With metered service and $1 minimum charge the customer is permitted to economize by use of his furnace coils in conjunction with the electric system. Eventually we hope to convert our present flat-rate customers to this off-peak rate which will release many kilowatts of peak capacity for other uses. For the present we shall concentrate our efforts on obtaining new customers on the new rate because of the surplus station capacity now available. We probably have a number of customers who are not now receiving adequate service under the flat-rate installation that can be converted to the metered service with very little sales effort and who will then obtain adequate water heating service."

Discussing the adaptability of the rate, Mr. MacFadden points out that it is available for any water-heating purpose as such so long as the stated conditions of the rate are complied with. The off-peak hours are made flexible so that they may be changed from time to time as peak conditions on the system change. However, the customer is assured of 18-hr. service per day, and every installation will be designed to create enough storage of hot water to carry the customer over the period when the service is off.

ECONOMICS INVOLVED

The load characteristics of the company's system indicate a morning and evening peak, each of about four hours' duration, that of the morning being 20,000 kw. lower than the evening. The 6-hr. off period has been established for 2 hr. in the morning and 4 hr. in the evening. By dividing the water-heating demand equally between the first and the second 2 hr. of the morning peak, by proper setting of the time switches, it will be possible to add 40,000 kw. of water heating demand without raising the morning peak above the evening one, and, of course, without increasing the evening one, since all heaters will be off during this period.

The highlights of the economic study preceding the adoption of the rate were discussed by George E. Quinan, chief engineer, in an interview with a representative of ELECTRICAL WEST. Mr. Quinan stated that the use of any device for limiting the size of the customer's demand with the view to keeping down the peak demand on the system cannot be wholly successful. He pointed out, for instance, that a load limiter on the customer's range and water heating installation, while it keeps down the customer's individual demand, nevertheless destroys to some extent the diversity factor in electric range service and in thermostatically controlled electric water heater service, since, when the ranges are thrown off, the water heater demand immediately comes on. Studies of cooking

and water heating habits as disclosed by experiments on group installations proved conclusively that, if the company desired to gain the full benefit of the diversity in both electric range service and electric water heater service, and at the same time keep all the water heating off the company's system peak, it would be necessary to control the use of water heating service on a time basis rather than on a load basis.

Further, these studies indicated that with only a 6-hr. off period required to keep the water heating load off the system peak, neither the tank nor the heating units would have to be materially increased in capacity to provide storage or wattage necessary for adequate service to the customer, above the capacities the customer would need if his water heating were left on continuously. This meant that the initial investment of the customer could be kept down below the economic limit of his ability and willingness to pay. From the company's standpoint a substantial load could be added at a small investment in distribution equipment instead of at the over-all per kilowatt investment for the entire system, and service could be offered at a price above cost and below value of the service.

This distribution investment, principally in time switch and meter, is estimated to amount to 50c. per dollar of annual gross revenue to be derived from water heating service. As to investment in the plant back of the distribution system, Mr. Quinan estimates that approximately 1 kw. of steam plant capacity will eventually have to be installed per additional water heating customer in order to supply kilowatt-hours to the water heaters during short periods when excess hydro-power is not available. None of this steam plant investment need be charged against the water heating service, however, because in the normal course of events such additional steam capacity would be required for taking care of the peak demands levied on the system by other classes of service. The fuel cost of such steam kilowatt-hours used by the water heaters would, of course, be an operating expense attributable directly to water heating.

In this analysis Mr. Quinan was figuring in terms of adding 25,000 water heating customers with a connected load of 50,000 kw., but a demand of only 25,000 kw. on account of the observed diversity in this class of load. The average annual revenue per customer expected from this service on the new rate is $40.

Service Manual

In order to inform sales and service departments of the manner of installing heaters and tanks in such a way as to deliver adequate service at high efficiency, the company has issued a water heating manual. This booklet presents graphic and tabular data necessary to the proper sale and installation to secure adequacy and economy in each individual case. Salesmen are cautioned not to underestimate the value nor overstate the possibilities in performance of electric water heating.

The introduction to the manual states:

"Our new metered water heating storage rate is very desirable for domestic, commercial and farm uses and opens up a broad field of application which has been to some extent closed to us.

"Customers' demands vary widely, and if the flat rate is installed to care for the ordinary demand, customers are sometimes without hot water when their requirements are large.

If, on the other hand, such a heater is installed to care for the greatest uses their cost on days of ordinary consumption is abnormal. This condition is ideally met with the new rate, the principal requirement being that the tank must be large enough to carry customers over the off-peak period with sufficient hot water to meet their needs so they are not conscious of the time control limitation.

"It is our purpose to render a worth-while water heating service at a reasonable cost, which calls for proper installations that will encourage the widest use among our customers."

TABLE I

Schedule of Tank Sizes and Wattage Allowed

Off-Peak Rate

Tank Size	Wattages Upper Element	Lower Element	Total Wattage
18 gal.	0	1,000	1,000
24 gal.	1,000	500	1,500
30 gal.	1,200	600	1,800
40 gal.	1,600	800	2,400
52 gal.	2,080	1,040	3,120
60 gal.	2,640	1,320	3,960
82 gal.	3,280	1,640	4,920
100 gal.	4,000	2,000	6,000

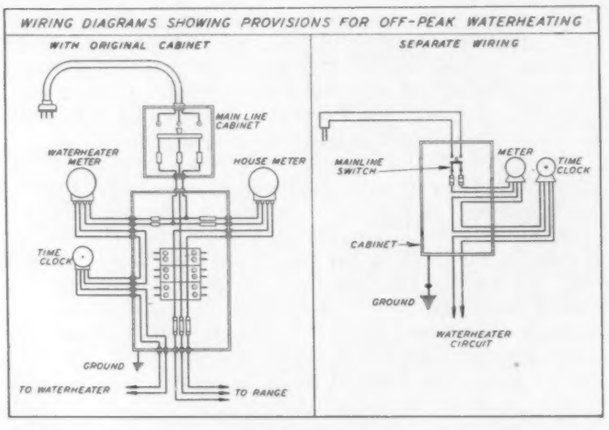
The capacity of the upper element shall not exceed twice that of the lower element.

After giving the wattages desirable on different sized tanks, Table I, the manual describes various systems using one or more tanks with or without furnace coils and using different types of water heaters. Check valves on furnace coils to prevent back circulation when the furnace is not in use are made mandatory. Diagrams of the different installations are given.

As supplementary information in this part of the manual, experiments on the cost of heating water with the furnace as conducted by the Washington State College, Pullman, are quoted, showing that the percentage of the entire fuel bill for heating water in this manner was 16 per cent.

There follows a discussion of the effect of adequate insulation on tanks and piping with respect to radiation losses. Tables and charts, from which radiation losses in watt-hours in a given system can be figured, and which graphically portray the necessity for adequate insulation, are presented.

To permit accurate calculation of the proper size of a water heating installation under known conditions of use, Table II, shown herewith, taken in conjunction with the tables and charts provided on radiation losses, are used.



Because of possible time clock interruptions when the main switch is pulled, the wiring on the left is not as satisfactory as the separate service on the right

TABLE II

RATE OF HEATING WATER AT 100 PER CENT EFFICIENCY

Capacity of Heater in Kw.'s	Gallons Water Raised 100 deg. F. 1 Minute	5 Minutes	15 Minutes	30 Minutes	1 Hour	24 Hours
0.6	0.041	0.204	0.614	1.228	2.456	58.94
0.75	0.051	0.255	0.767	1.534	3.070	73.68
1.0	0.068	0.341	1.023	2.047	4.093	98.23
1.5	0.102	0.511	1.534	3.070	6.140	147.36
2.0	0.136	0.682	2.047	4.093	8.187	196.48
2.5	0.170	0.852	2.556	5.117	10.233	245.59
3.0	0.205	1.023	3.070	6.140	12.280	294.72
3.5	0.238	1.193	3.581	7.163	14.327	343.85
4.0	0.273	1.364	4.093	8.187	16.373	392.96
5.0	0.341	1.706	5.117	10.233	20.467	491.18
10.0	0.682	3.411	10.233	20.467	40.933	982.36
25.0	1.706	8.527	25.583	51.166	102.333	2455.90
50.0	3.411	17.055	51.165	102.333	204.665	4911.80

Supplementing these data, a simplified formula for calculating the connected kilowatt capacity necessary to raise the temperature of water at 100 per cent efficiency is given as follows:

$$\frac{\text{Gallons of water} \times \text{degree F. rise desired} \times 2.443}{1{,}000 \times \text{time in hours}} = \text{kw. capacity required.}$$

"As radiation losses are not considered, the radiation charts should be consulted; the efficiency of the insulation of the job in question should be determined and applied to the result obtained by using the above formula."

There follows a discussion of correct and incorrect plumbing, properly diagrammed, and the manual closes with a list of the most common conditions causing trouble and the remedies to be applied for their correction.

No special sales force nor special campaign is to be set up at the present time for selling water heating service under the new rate, according to R. W. Clark, general merchandise manager. The rate has been put into effect toward the end of the best season of the year for promoting electric water heating and the company expects to proceed carefully at first to gain experience which will be useful when a more aggressive sales campaign on water heating will be undertaken next spring. Dealers are being encouraged to sell water heaters and steps are being taken in all districts to inform those interested in participation and cooperation about the new rate and the possibilities of selling water heating under it.

▼ ▼ ▼

Turning *W*ords Into *W*ork

Which Means Changing the Research and Study of the Industry's Associations Into Dollars for Supplies, Installation, Merchandise and Kilowatt-hours

JUST so much conversation seems to be necessary to any project. First it must be talked about, thought out loud. Next follows the period during which those who are so gifted as to do so must grasp the essentials from the midst of the chaff, separate them, arrange them in logical order, evolve a plan. Only then does it become time to send word up and down the line which will start the machinery, when and as directed.

If this is true of the building of a power plant, or the writing of a grand opera, it is true no less of cooperative activity. In fact, where by its very nature activity must depend upon the banding together of many individuals to accomplish a common task, this process is inevitable, imperative. Acceptance of each person's responsibility in the undertaking is completely dependent upon a clear understanding of his place, his part in the performance of the entire plan.

Fortunately this groundwork, as far as the Pacific Coast Electrical Bureau is concerned, is now practically finished. The talking has been done in numerous organization committee meetings. The essentials have been selected and set down in their various committee budgets and programs. Altogether the plan is very near complete. The last step—action, follow through—is at hand.

Thus the goals each of the six divisions of the Bureau have set for themselves are established. On the eve of the performance itself it is of decided interest to survey the framework of the plan. The industry, which has invested so much in the time of its men and in the actual expense of operation of the Bureau, may take the following inventory as the first report of the new organization. Let the outline speak for itself.

Agricultural Electrification

General activities proposed:

1. Round out and develop the commercial aspects of the test work done by the Committee on the Relation of Electricity to Agriculture.

2. Study and develop farm equipment for its most economic benefit to agriculture. An example of this has been in the recent developments made in obtaining satisfactory low-priced feed grinders.

3. Repeat the survey of existing farm electrification along the lines formerly carried on by the C.R.E.A.

4. Maintain contacts with the farm bureaus.

5. Prepare factual publicity articles for farm journals.

Central Region special activity:

1. Direct mail campaign to 2,000 agricultural customers.

2. Each utility office is setting up a consumer list, serially numbered, placing a duplicate list in the Bureau headquarters. When the chairman finds a piece of interesting information he sends it to the Bureau headquarters for reprinting. Also, he sends a list of serial numbers indicating which specific customers are to receive mailed reprints. Thus a live, active list is maintained and utilized, without waste of mailing.

Northern Region special activity:

1. California State Fair electrified farm exhibit maintained with the cooperation of the P. G. and E. Co. and manufacturers of farm equipment. A total attendance of 40,783 was registered; over 200 excellent prospects were secured which are being cared for in a follow-up campaign.

2. A study of the use of ultra-violet radiation on chicks is being conducted to develop its commercial aspects.

Southern Region activity:

1. Prepare a study on soil heating for commercial sales use.

2. Special investigation is being carried on to determine the commercial possibilities of electrification in brooding, light and ultra-violet light, and water heating for chicken ranches.

3. Preparing farm wiring standard with particular reference at the present time to establishing a county wiring ordinance in Orange County.

Appliance Merchandising

General activities:

1. Employ a prominent educator to conduct a series of industry educational courses. The N.E.L.A. sales and appliance courses are being edited for use by dealers and wholesalers, as well as central stations, with their sales forces. The plan is to have a series of six lectures in six key locations in southern California in order to enroll students in the first course. Where a sufficient enrollment is secured, a rotating series of lectures on selling will be carried on during the following six weeks.

2. A special mailing piece on home electrification is being prepared by the Pacific Coast Electrical Assn. Merchandising Bureau to go to all persons requesting information on home wiring from the P.C.E.B. and also to be sent to all holders of Red Seal certificates.

Northern Region special activity:

Prepare an extensive range drive with a special feature to be offered to all customers during a limited period, bringing into it all branches of the industry, each one contributing to the special feature. This campaign is planned for territory extending from Bakersfield to the Oregon line.

Industrial Electrification

General activities:

1. Mailing of a series of letters to industrial plants advising of and offering the services of the Bureau as a source of information on electrification problems, application of portable tools, relighting, arc welding, modernization, distribution systems, etc.

2. Conduct visits of industrial plant executives to model installations, such as Ford plants at Long Beach and Richmond. In these visits each subcommittee arranges to tell its story in connection with the part of the plant demonstrating that particular equipment, such as:

(*a*) Portable tool use and motorization.

(*b*) Arc welding.

(*c*) Distribution systems.

(*d*) Industrial lighting.

One of the Bureau window displays on shaded lights in the Newbery Electric Co., Los Angeles window

Guests are registered and later circulated with a letter from those who had lectured on the trip, enclosing return card to the Bureau on which items they are interested in have been checked.

Industrial heating subcommittee activity:

Tests on heat treating of metals are to be made and the results given publicity and used for selling.

Oil field electrification committee activity:

Analyze with the oil industry possible new applications which will increase the efficiency of existing units. Already such study has resulted in the production of an improved design of mud pump which is finding widespread use.

Lighting

General activities:

1. Lighting advertisements prepared for use in the Bureau magazine advertising are being sent to each utility advertising department for tie-in with the local newspaper campaigns.

2. Six lighting articles prepared, two on commercial, two highway, one industrial, and one domestic lighting, for magazines of Western circulation.

3. Outlines for lectures have been prepared on (*a*) domestic, (*b*) commercial, and (*c*) industrial lighting with appropriate light box display material, ready for use by the Bureau.

4. Tie-in made with the industrial electrification subcommittee on lighting for plant inspection trips to present the value of good illumination.

5. Plan is being made to operate employee educational courses now being developed by the P.C.E.A. educational committee.

6. Two direct mail campaigns each of four illustrated broadsides and a lighting booklet start in September.

(*a*) First deals with commercial lighting, going to a mailing list of 3,400 names.

(*b*) Second deals with industrial lighting, going to a mailing list of 2,700 names.

Both lists are especially compiled by utilities and are made up of executives in important business concerns. One letter will be mailed each month for four months, each containing a return post card.

(*c*) Similar campaign on domestic lighting is planned, in which a booklet describing principles of home lighting will go to each respondent to the Bureau's magazine advertising.

7. Three domestic lighting window displays (see illustration), one for each region, have been built. The Southern Region has a 28-week itinerary for this display, the Northern Region one for 24 weeks, and the Central Region a similar plan.

8. Letters have been addressed to lighting manufacturers asking the delegation of an individual to whom to direct inquiries for lighting information. Reports on these will be kept to check follow-up.

9. Study of the feasibility of a commercial lighting booklet derived from the mass of available lighting literature.

10. Request the Advertising-Publicity Section, P.C.E.A., to conduct an essay or a speaking contest among utility employees on subjects of commercial and industrial illumination.

11. Preparation of a working manual, outlining the responsibilities of each member of the Bureau lighting committee in order to bring activities into orderly play.

12. The committee recommends that the outdoor floodlighting, garden and sports lighting programs be started in the spring as the most auspicious time.

Red Seal

General activities:

1. A uniform state ordinance is being prepared jointly with the executive committee of the Southwestern Section, International Association of Electrical Inspectors, in cooperation with the California Electragists and representatives of all branches of the industry. This ordinance is being submitted to a vote of the Inspectors' association and when approved will be presented to the annual convention of the Pacific Coast Building Officials Conference to be made part of their uniform building code.

2. Asked and secured executive approval from most of the chief executives of the central stations on a definite plan for promotion of the Red Seal programs which include:

(*a*) Establishment of definite quotas for each district.

(*b*) Assignment of definite Red Seal responsibility to individuals in each company.

(*c*) Employment of special Red Seal salesmen by the companies in large congested territories.

3. Suggested changes in the Red Seal specifications are being considered and if generally acceptable will be inculcated into present requirements.

4. Because of differences in Eastern and Western standards, and because widespread distribution of Eastern (national) residential and industrial wiring specifications has been made, causing confusion with existing Red Seal specifications which have received recognition over several years of effort in California:

(*a*) National specifications being published by manufacturers are asked to be withheld from distribution in California.

(*b*) The Bureau will publish the California specifications on the same (Lefax) size sheets and the manufacturers will be asked to substitute these for national specifications to California mailing lists.

5. Hold regional meetings of Red Seal committees after pending ordinance, specification revision, and other matters are settled, to plan an aggressive promotional campaign beginning the first of the year.

6. Follow up on all Red Seal inquiries received at the Bureau.

Northern Region special activities:

1. Assist in the settlement of differences of opinion arising over the proposed new San Francisco wiring ordinance.

2. Act as advisor to the retail merchants in their attempts to prepare a substandard appliance regulation ordinance for San Francisco.

3. Study of ordinance proposed by the Better Business Bureau for the regulation of advertising and the preventing of false and misleading statements.

Advertising

General activities:

1. For the first time the Bureau's activities and its advertising campaign in the magazines of Western circulation have been coordinated so that

(*a*) Special copy has been prepared for each class of publication, particularly addressed to that class. Subjects have been derived one after another from the Bureau's activities in accordance with the wishes of the committee in charge of that activity. The result has been:

(*b*) Responses to Bureau advertising have materially increased, bringing requests for

(*c*) Booklets and bulletins offered in the advertisements. This provides further:

(*d*) A prospect list of interested customers which is referred to the logical outlets for follow-up.

Summary

This program of the Pacific Coast Electrical Bureau is perhaps the largest and most comprehensive ever attempted on so wide a scale. Its first year has been devoted largely to organization and to distilling the many thousands of ideas into a few potent, significant activities. Now the attention of the industry can be concentrated upon these projects for the ultimate benefit of each branch of the industry.

To the dealer the program means stimulated markets, breaking down of sales resistances, creating acceptance, preparation of the customer for a sale of the equipment at a fair price and profit.

To the contractor it means development of needs for wiring to serve the new wants created, increased wiring on new installations, substantial improvements to existing installations. It means labor and materials profitably employed.

To the wholesaler it means movement of wiring supplies and appliances to fill the demands created. It means increased volume at profit and with reduced sales expense.

To the manufacturer it means stimulation of every outlet for produced equipment, appliances and wiring materials. It means payrolls and operations resumed.

To the central station it means increased revenue from kilowatt-hour use, satisfied consumers, active construction programs and enlarged public service.

To the inspector it means wiring sold up to a standard instead of being skimped below the minimum, hence greater safety, adequacy and public satisfaction.

To the industry at large it means the promotion of harmony and understanding based upon better business conditions in which all receive benefits.

To the consumer it means that electricity performs more of the tasks, the drudgery, serves manufacture and commerce more completely, brightens life, enhances the home, brings comfort, convenience, and cleanliness. It means increased use which will bring reduced rates. It means satisfaction and profit.

This, then, is a program wherein none are injured and all find benefit. It is a circle widening as it progresses.

The words have been spoken and written down. The plans have been evolved and perfected.

The time for action has come.

IRONERS

SOME things seem to be born to thrive in adversity. Of all the domestic electrical appliances this seems to be true mostly of the ironer. For years washing machine manufacturers have built ironers, knowing that, if they only could get the housewife to use them, these appliances were inseparable from the washer. In most cases, indeed, of the two, the ironer really had the greater cause to be in every home.

Good times were not favorable to home laundering to any extent. During the last two boom years even washing machine sales suffered. With adversity the home has regained its place as a workshop which should be provided with the proper tools for domestic tasks. It is significant that the day of the ironer has arrived in a large way.

Last year it was the wringer post machine that found great favor and many sales. This year is rather that of the standard table or complete unit model. In the following account will be told some details of two unique sales plans for the development of ironer business. The first is a cooperative drive, by a utility which does not itself sell washers or ironers, together with manufacturers and their dealers. The second is a plan which has not yet been given full trial but which offers unusual opportunity for follow-up on tested washer customers.

Another feature is a prominent manufacturer's analysis of the load-building potential in washers and ironers.

Oakland Cooperative Ironer Drive

BEGUN in a committee meeting of the P.C.E.A., expounded in a playlet at a later conclave, and finally tested out in a 30-day advertising and selling campaign in the Oakland, Berkeley and Alameda County area of California, in which dealers and manufacturers of five makes of ironers and the Pacific Gas and Electric Co. participated, an ironer drive has been developed that provides a pattern after which others of similar nature may be designed.

In the first place, the P. G. and E. Co. does not sell, nor intend to sell washers and ironers, according to its sales executives. Yet Bert W. Reynolds, special dealer representative of the power company, at the P.C.E.A. committee meeting of which G. Schuyler, manager, Apex-Johnson Co., Oakland, was chairman, pledged company support of a cooperative selling campaign. The details of the plan were later turned over to Rodney Doerr, of the utility company, and in a meeting of agents for the various makes of ironers F. S. Fenton, Jr., division sales manager, Syracuse Washing Machine Corp., was named chairman of the Electric Ironing Machine Bureau formed to conduct the first trial campaign in the East Bay and Alameda County division of the P. G. and E. Co.

Participants were the Apex-Johnson, Conlon, Meadows, Easy and Thor companies. The campaign ran from Aug. 17 to Sept. 19 in thirteen cities and towns in the Alameda and Contra Costa County area. A fund of $3,000 was contributed by the manufacturers and central station to carry on joint advertising under the name of the bureau, print and distribute to power company customers 35,000 folders, supply display cards for dealers' windows, hire a demonstrator for three weeks, print dealer announcement letters for their customers, enter the electrical show staged by the Oakland *Post-Enquirer* the week of Aug. 10, print 50,000 folders with dealer imprints, and purchase 400 dozen hand towels to be given as premiums to all who tried out an ironer.

Included in the plan was a bonus to P. G. and E. employees of $1.50 for prospects that were sold, and a discount for employee personal purchases. All leads received at the P. G. and E. offices, where demonstrations were being held daily, were divided equally between all participating manufacturers. None of the manufacturers' salespeople worked from the power company's floor except at the old Great Western Power offices, where a large display was maintained and each manufacturer demonstrated his particular models.

Advertising ran in the Oakland *Post-Enquirer* and Oakland *Tribune* signed by the "Ironing Machine Bureau." The drive opened with 30-in. space in connection with the electrical show in the former Taft & Pennoyer department store building during the week of Aug. 10 to 15, at which an estimated attendance of 75,000 was enjoyed. There followed two 110-in. advertisements at the opening of the campaign, succeeded by 50-in. and 80-in. space in both papers during the next week. The utility mailed circulars with its bills on Aug. 10 and Sept. 5. Dealers mailed on Aug. 10. A general dealer and utility employee meeting was held in the P. G. and E. auditorium in Oakland on Aug. 24, at which time the ironer skit, "No Tickee, No Washee," by W. A. Cyr, and several talks and demonstrations were given.

During the first two weeks of the campaign the advertisements carried the offer of a free towel to any woman who came to either a dealer's store or the power company office and actually tried ironing by herself on an ironer. Her name and address were taken on a receipt for the towel and she was thus considered a prospect, and the name turned over, as previously mentioned, to one of the manufacturers. These towels were supplied free to the utility, which did no selling itself and was largest contributor to the drive, and at cost to dealers.

Results from the campaign were highly satisfactory

Now Come Into Their Own

to all concerned. No definite quota had been set, but a tentative goal of 400 ironers was understood. The largest previous total sales during any month this year was 127 units. At the end of the campaign 405 had been sold by the 50 dealers. The estimated load to the power company was 567 kw. with revenue estimated at $2,843.10. A total of 236 dozen towels were given away, and 1,500 prospects were developed and distributed to manufacturers. Many of these will yet be developed into sales.

The secret of ironer selling, according to Mr. Fenton, is in demonstration—in getting the housewife to try one and use it. This entire campaign was predicated on that idea, to get the prospect to come down to a store and try an ironer under competent direction, and learn how easy it was to operate. This thought was stressed in all the advertising.

Undertaken as an experimental cooperative drive, in a territory representing about 20 per cent of its meters and income, the Pacific Gas and Electric Co. and the manufacturers of ironers feel confident that it can be applied in other divisions with but slight variations in plan or procedure. Such future campaigns are being contemplated. Altogether the plan adapts itself to almost any locality and should prove successful wherever entered into with the enthusiasm and careful planning which marked this first big cooperative ironer drive in the West.

Two Continued Payment Plans

IN ADDITION to an extensive educational effort in which every clerk, bookkeeper, every employee of the office, as well as all 90 employees and salesmen of the Easy Housekeeping Shops, operating out of the offices of the Southern California Edison Co. Ltd., are drilled in the use of an ironing machine, a plan has recently been evolved by A. W. Althouse, assistant manager of the utility merchandising department, and W. H. Gribble, manager of the Easy Shops, which holds promise of developing into a first-rate follow-up of washer sales. Although this plan has recently been started and as yet has not had sufficient operation or salesmen's preparation to have produced expected results, it has in it all the elements of a find.

Two plans are offered by which purchasers of washers who have demonstrated their integrity by their steady paying of installments, and hence are first-class preferred prospects, may be sold an ironer before their contracts have run out, refinancing the balance due on a new contract.

The first plan accepts ironing machine contracts from customers whose term contracts have not more than two installments yet to mature, making the first payment on the ironer contract due not later than 30 days after the due date of the last washer payment. As an example of the working of the plan the following typical case is given:

EXAMPLE—Deferred First Payment: The customer has a

The Washing Machine as a Load-Builder

By R. G. CHAMBERLAIN
Vice-President, Hurley Machine Co.

I find that power company sales managers, as well as other officials, sometimes have the impression that the washing machine business is not valuable to them from the load-building standpoint. Usually they have the impression that the only load received from the washing machine is from the ¼-hp. motor operation.

Every time the housewife sends her laundry to the public laundry instead of doing it at home the utility loses not only the ¼-hp. motor load from the washer, but it loses the load from the ironing machine, the flat iron, a certain amount of lighting in every dark laundry, and the load from the heating of the water.

The following is a fair estimate of the kilowatt-hours lost each week and for the year:

	Weekly	52 Times a Year
	Watts	Kw.-hr.
¼-hp. motor for 2¼ hr. per week	500	26.0
3½ hr. per week with flatiron	2,275	118.3
2½ hr. per week with rotary iron	3,750	195.0
Approximately 300 watts per week lighting in most dark laundries	300	15.6
	Kw.-hr.	
10 kw-hr. to heat 30-gal. tank of hot water each week	10	520.0
		874.9

Oftentimes we are told that if an ironing machine is used there will not be a need for the flat iron for as many hours each week. This would be true if women weren't creatures of habit and did all the ironing on an ironer. Actually it does not work out that way. What happens is that many more pieces are ironed if there is an ironing machine than would be with only a flatiron in the house. Such pieces as towels, sheets, and many others are never ironed in a great many homes because of the excessive labor involved. If there is no ironing problem it will not be long before women use more linen,—if it is convenient to do the laundry work at home there is always a great deal more laundry to do.

Power companies in some localities are spending considerable money putting on water heater campaigns. The household laundry will do more toward building up the electrical water heater load than any other appliance. There is absolutely no installation expense for home laundry equipment, and the sale of this equipment carries a very satisfactory margin of merchandise profit. In the case of small customers, the energy used is all at a high rate and there is a very great diversity. These appliances almost never are used on peak loads. The contributing factors that go with the sale of a washer offer a very satisfactory load to any central station company. Moreover, in cases where power companies also operate gas properties they get the load from either a gas water heater or an electric one.

washer contract with two monthly installments yet to mature, the final payment being due on Dec. 15. She wishes to purchase, and takes delivery upon an ironer, to be paid in 12 installments. The regular down payment of $9.50 (or more if possible) is collected, leaving a balance due of $95. The simplified time sales chart used by the company, including carrying charges, shows that a balance of $95 amounts to $105.60 on time payments, or $8.80 per month. Any time after Oct. 15 the contract can be taken, the first payment being due on Jan. 15.

This and the next plan are only offered to a selected list of customers taken from the acceptance corporation's records of good pay customers. They are supplied to each district office. The second plan permits sales of ironers to a similar preferred list of washer contract customers who have not more than six and not less than three monthly installments yet to mature. In this case the total balance due on the washing machine contract is rewritten on an ironing machine contract, thereby extending the time in which to pay the balance on both over a period equal to the ironing machine purchase. An example of the financing of the transaction follows:

EXAMPLE—Extension Contract: A customer has purchased a $175 washer on March 15, making a down payment of $15 and turning in an old washer for $10, leaving a cash balance of $150 to be paid in 12 monthly installments of $13.67 for a term payment balance of $164.04. On Oct. 16, after making seven payments, she purchases an ironer, signing a new contract covering the ironer and the balance of the washer contract. Unearned discount on the first contract and other details are covered in the following:

Total term balance	$164.04
Cash balance	150.00
Carrying charges	14.04
Pro-rated unearned discount (5 installments still not due, or 5/12 of $14.04)	5.85
Total term balance	$164.04
Less 7 payments of $13.67	95.69
Balance 5 months	68.35
Less unearned discount	5.85
Cash washer balance to new contract	62.50
Cash price of ironer	114.50
Cash total of new contract	177.00
Less down payment ($9.50 is minimum) in this case of	10.00
Cash balance on new contract	$167.00

This is written up as a new contract, to run 15 months, which with carrying charges added brings the new contract total to $185.85, at $12.39 per month, first payment being due Nov. 15. In order to protect the acceptance company from sending out a bill of sale or considering the sale a repossession, a summary of the transaction is sent it together with the new contract.

The selling advantages of these two plans are obvious. The customer, tested over a period of time, buys an ironer and starts using it before finishing the washer contract and taking on some other outside obligation, which inevitably delays the sale of an ironer for months, even years.

Such a plan, together with unfailingly continuous training of personnel in the actual use of an ironer, offers a genuine future to the ironer business. To provide the requisite training the Easy Housekeeping Shops maintain a qualified woman demonstrator whose entire time is devoted to training employees only. She is supplied with a *de luxe* delivery car, attractively lettered, "Easy Ironer Instruction Car," containing the three types of ironers: wringer post, table and unit models. With this she has made already three complete circuits of all of the Edison properties and housekeeping shops, educating the personnel of these organizations actually how to iron, so that every one of them, no matter when called upon to do so, will know how to teach others without embarrassment or fumbling.

"There will never be any end to this educational work," was the emphatic declaration of Mr. Fenton. "It is the key to the situation as far as ironers are concerned."

The Electric Ironer does it all!
NOW... the last curse of wash-day is gone forever!... Come TRY it!
Free just for trying it
FREE TOWEL
Amazingly easy to operate!
in less time
EFFORTLESS IRONING
WITH NO MORE CURRENT THAN HAND IRONS
If you can iron by hand you can iron by machine, more easily ...and more skilfully
$5 Initial Payment
puts an Electric Ironer in your home
Electric Ironing Machine Bureau
Apex
Conlon
EASY
Maytag
Thor

BREUNER'S
IRONS Everything PRESSES Anything and its a Kitchen Table too
$5 down!
The Conlon Cabinet IRONER
Many anyone can iron Eatonand with the New EASY IRONERS
Buy Your APEX, CONLON, EASY, MEADOWS or THOR IRONER
Only $5.00 Down
Maxwell
WASHINGTON & 14TH ST., OAKLAND
J. F. Hink & Son
Berkeley Headquarters for Ironing Machines
Iron Right with the IRONRITE
See ALL of the Ironers Illustrated on the Opposite Page
Demonstrated at
Whitthorne and Swan
Try one yourself, without obligation!
WHITTHORNE & SWAN
ALAMEDA DISPLAY
All Models Are Ready For You At
ANSEL'S ELECTRIC
ALAMEDA

Newspaper spread showing advertisements of Ironing Bureau and flanking advertisements by Oakland ironer dealers. Stories in adjoining columns of these two pages were wholly on phases of electric ironing. It will be noted that the center of attention is placed on getting people to TRY an iron

Selling Complete Electric Service in the Home

By R. M. BLEAK
Superintendent of Lighting and Appliance Sales, Utah Power & Light Co., Salt Lake City

Three-in-One Ensemble Offered by Utah Company Promotes Sales

FOR about a year and a half now the Utah Power & Light Co. has been featuring the sale of complete electric service to the home. This is being done by concentrating the effort primarily on the sale of cooking, water heating and refrigerating service. These three uses constitute the *sine qua non* of complete home electrification. When all of them are used by the customer, along with other supplementary uses that always accompany them, the mutual benefits to the company and to the customer are at their maximum, while the lack of any one of them in the use of electric service made by an individual customer reduces these benefits proportionately. In other words when all three services are sold to a customer, the company receives its maximum revenue from the home with a satisfactory load factor, while the customer pays the minimum rate per kilowatt-hour, and replaces enough other home services so that his higher electric bill is offset by a comparable decrease in his other household expenses.

With this philosophy as a background, therefore, the company has set up its general sales plan to promote range, water heater and refrigerator business among its domestic customers. Results have already begun to be felt in a substantial increase in domestic revenue, and in a growing consciousness on the part of the public as to what constitutes complete home electric service, and what benefits accrue from its utilization.

Inducement Rates

As a basis on which to develop this business, the company found it desirable to make a new inducement rate termed a "combination rate." Under this rate the customer gets a continually lowering unit price per kilowatt-hour the more he uses, and secures the lowest price only when he makes use of all three of the services referred to above. This rate combines a fixed charge based on the number of active rooms, a low unit charge for all service where water heating is not used, and an additional lower step to cover water heater consumption.

Specifically, the rate reads: $1.25 per month for four rooms or less; 20 cents per month for each additional room; 2½ cents per kw.-hr.; and, where water heating service is used, 1½ cents per kw.-hr. for all consumption in excess of 300 kw.-hr. It is available only to customers using an electric range or a range in combination with one or more of the other two major services. Under this rate, the average customer in a medium sized house using all three of the major devices along with lights and other home electric appliances secures his over-all service at an average cost of slightly over 2 cents a kilowatt-hour.

Sales Plan

In order to induce the customer to think of home electric service in terms of complete service and not in terms of individual appliances, the company has discontinued campaigning on individual units. As a substitute for such campaigns, the company is carrying on a continuous campaign urging the customer to buy all three units at one time or such of the three as he does not now possess.

Term payments on the purchase of two or more of the major appliances are made as easy as possible, consistent with accepted merchandising.

There are no individual appliance specialists on the sales force, each salesman being trained to sell the three major appliances as complete home electric service rather than as pieces of electrical merchandise. The training and supervision of the sales force is, in fact, one of the most important features of the general plan. Adequate initial training of new men and frequent meetings with the force have resulted in creating a high type of salesmen capable of doing a balanced job of intelligent selling. Salesmen are paid a salary plus commissions so that it is very much in their interest to sell two or three appliances at one time instead of one.

A large proportion of the appliance advertising done by the company is devoted to selling the complete electrified home idea. This is done by reiterating what the electrified home must contain in the way of major electrical appliances, and by bringing out the advantages to be had from the "step-down combination rate." In each of the advertisements on this subject, the three major appliances are either named or pictured, but no prices or

terms are given. The emphasis is predominately on the electrified home rather than on the appliances and their prices. Such advertising, samples of which are shown, is appearing once a week in the newspapers all over the company's territory.

To supplement this general advertising, however, it has been found desirable to devote some space to the actual appliances being promoted by the company so that these appliances can be explained in more detail with specific reference to their advantageous features. These individual appliance advertisements are, therefore, interspersed between the general advertisements.

One of the main results attendant on this effort of the past year and a half has been that the idea of what constitutes complete home electrification has become more and more prevalent in the minds of the public. The company feels that it is getting over its story that the electrified home is desirable; that a larger electric bill does not represent increased expense in the household since it replaces other expenses for other services.

INCREASED USE
BRINGS DECREASED RATES
LET'S TALK OVER THIS ELECTRIFIED HOME IDEA
UTAH POWER & LIGHT CO
EFFICIENT PUBLIC SERVICE

A complete record of the increase in the number of electrified homes from this effort is not available, but the increase in the average domestic consumption on the company's system in the year 1930 as against the year 1929 was 150 kw.-hr., yielding a substantial increase in revenue from domestic business. During the same period the reduction in the average cost per kilowatt-hour to the domestic customer has been 7½ per cent.

▼ ▼ ▼

A Communique----From the Western Front

The 50-Degree War on Spoiled Foods to Make the Country Safe for Electric Refrigeration Continues Unabated—Western Generals Report Enemy Quotas Riddled in This First of Three Big Drives

PESSIMISTIC economists find no solace in refrigeration sales records of the West. With saturation lower than in the country as a whole, local divisions of the national refrigeration bureau are selling more units than before and are overselling quotas by good margins. Sales are 18 to 23 per cent above 1930. Better group relationships might account for this fact; aggressive, intelligent merchandising is probably the real cause.

Northern California's 75-day campaign, "The A. F. Hockenbeamer Plan" (ELECTRICAL WEST, June 1, 1931, p. 608), has officially closed, but results are still being felt. At writing, 1,124 good prospects still are being worked from information turned in by Pacific Gas and Electric Co. employees during the campaign proper. This must be a boom year in northern California for the dealers sold an average of 133 units a day with a value of $30,000, against a bogey of 100 units. In the 75 days, 9,897 refrigerators were sold, a buyers' investment of $2,250,000, 33 per cent over the quota. The power company sold no refrigerators, but it did a great amount of promotional work, ran a contest among its employees for prospects which might be turned over to dealers, paid for 11,744 column inches of newspaper advertising, which was more than matched by the 1,014 cooperating

In Seattle, nine exhibitors displayed their products for nine days in an outdoor show. Considerable actual buying and a great deal of promotion and prospect-signing were the results

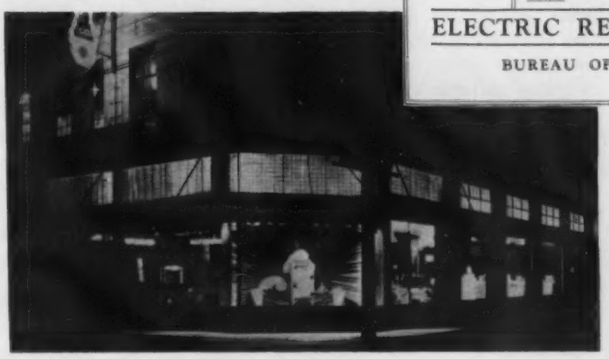
dealers, sponsored exhibits and helped in any way possible. The coordination of all factors is attested by the campaign's unusual success. Company employees purchased 494 units on a special sales plan.

Other sections of the West did almost as well. San Diego Consolidated Gas & Electric Co. sold 79 units in one month in a friendly competition with a local dealers' organization and won the contest by $1,101. The bureau in this city had a head start for a refrigeration combine had already been organized when the national program was announced; no time was wasted and the group plunged headlong into selling. Special sections of newspapers have been issued and all agencies have published an unusually large amount of advertising.

Above right—During the Pacific Gas and Electric Co. drive, refrigeration exhibits were held in all parts of the company territory. This one, in San Francisco, included models of all manufacturers in the campaign. As an indication of the effect of the national drive on manufacturers, nine distributors of seven makes started the year, nineteen distributors with thirteen makes were selling in P. G. and E. territory at the end of the campaign

Right—One of the San Diego bureau advertisements which ran in a local newspaper's special refrigeration section

Below—Even Manila (P.I.) fell in line and is pushing electric refrigeration, as this window of an island store shows



While the success of the drive in Los Angeles is assured, distributors have been loath to release figures on actual sales. In inland California towns, such as Fresno, sales have been higher than expected. In the San Joaquin Light & Power Co.'s territory, saturation is near the high point of 20 per cent.

Figures have not been compiled on other campaigns: most of these are still in progress and report fine success. In Boise, Idaho, dealers and prospects came from distances of 100 mi. to attend a refrigeration show of three days. No sales were made at the show, but prospect lists were made and the sales percentage is high. In Seattle nine exhibits were boothed at an outdoor show held under the auspices of the Seattle Exposition and Outdoor Show from July 25 to Aug. 2, inclusive. Attendance averaged 7,000 per day; each dealer sold enough equipment to pay for the cost of his exhibit besides securing a large number of real prospects. The main idea of the show, however, was not to sell refrigerators, but refrigeration to the people of the city.

Colorado and the other Mountain states have tasted success, also. The warmer states, Arizona, New Mexico and Nevada, are confident of reporting plus-quotas at the close of the year.

Though exceptionally warm weather which has prevailed in the East has not beset the West and brought the need for refrigeration more acutely to the customer's mind, intensive advertising and clear-headed selling have done the job. Dealers, wholesalers, manufacturers and power companies have joined in pushing local campaigns, certain that the national effort would afford able support. This it has.

Reliable estimates indicate that sales in California, Oregon, Washington, Nevada and Arizona will be approximately 72,500 units for 1931, bringing saturation in this territory to near the national average of 15 per cent.

Business Week (Sept. 16) reports that success of the nation-wide refrigerator drive, with its objective of 1 million units sold, seems assured. Interesting and somewhat puzzling are some newly announced price cuts by a few large manufacturers, even in face of tremendous volume increases. "Reports from practically every company have indicated that prices were sufficiently low to satisfy the highly critical buyers' market in which they are doing business. These are conditions that generally result in firmer prices rather than reductions." Whatever the reasons the effect will probably be that of further stimulating the market. Among companies announcing large gains are Frigidaire Corp., with September production scheduled 30 per cent above the 1930 level. A special four-month selling drive has been launched through 44 regional sales meetings. Westinghouse, just opening sales outlets in Western fields, showed 1931 sales 400 per cent above those of 1930. Both General Electric and Kelvinator also experienced greatly increased 1931 sales.

Copeland is enjoying the biggest volume in its history; Norge points to a 512-per-cent increase for the first nine months; Servel expects its nine months' sales total to run 200 per cent ahead of 1930; Majestic doubled its production to meet current demands; and others are meeting with similar success.

Western manufacturers, such as Electro-Kold, Holbrook, O'Keefe-Merritt, are not complaining about their increased sales.

Dealer Cooperation — The Eyes of

Co-oper-ate—To operate together or jointly for a common object or to a common end or result.
—*Standard Dictionary.*

NO WORD, unless it be "service," is so overworked as good old "cooperation." So much so, in fact, that the peach-bloom meaning with which it began life has been worn off in the swirl of subsequent flowing language. Of course certain general impressions still remain with it, certain flavors of its original crisp meaning when it was yet a young idea, fresh and promising so much to a competition harassed world.

It has served well and valiantly. It has been given superhuman tasks to accomplish. Chiefly, what it has lost has been something of the faith of its staunchest supporters who have worn themselves out trying to make deeds match up with the full significance of the word—cooperation.

Therefore, when the question is asked, "Does dealer cooperation really work?" the answer can only be, "Yes, if it is really cooperation."

Unfortunately cooperation too often is not "give and take" on the part of all persons involved. Too often it is all *give* on one side and all *take* on the other. Sometimes it is the central station that does all the giving, sometimes the dealers. The same can be said of the taking. Hence cooperation—operating together for a common object—breaks down.

Specifically, then, the answer to "Where does cooperation work and where doesn't it, and why?" should be useful information for dealers and utility sales executives everywhere. ELECTRICAL WEST, taking its life in its hands, makes the following review of the situation, specifically pointing out the existing weaknesses from an impartial viewpoint and with only one interest at heart—industry understanding and harmony and a well developed market. The diagnoses made are made in the interest of the general health and well-being of the industry at large. There is presented no criticism, either intended or implied, that is not constructively necessary.

If a prediction, heard in some quarters, materializes, to the effect that utilities will be legislated out of appliance merchandising or voluntarily cease because of pressure brought upon them within the next few years, it would be a serious economic loss to the electrical industry. Such a step would be a boomerang to dealers. It would occasion violent distribution shifts, possibly forcing large manufacturers into direct distribution. Such a result could not help but be a decided change for the worse rather than for the better.

On the other hand, the use of such a situation as a threat or the carrying on of merchandising on a basis persistently destructive to retail dealers, can have only the consequence of blinding reason to possible future effect in order, in desperation, to remove the present irritating causes.

Nor is this problem one concerning only the utilities and dealers. The futures of both manufacturing and wholesale distribution are so bound up in this problem that their combined efforts should be mobilized to effect real cooperation in appliance selling.

Survey first is necessary of what the major utilities of the West are doing in cooperative effort, the acceptance of this by dealers, and whether or not it is working satisfactorily. Since no two companies have the same plan, let each be considered separately.

First, as an indication of utility sales staff thinking, an attempt is being made in a locality served by several utilities, to arrive at some basic status on merchandising. As yet the plan is incomplete, has not met formal approval, has not yet been submitted to dealers, but it merits a great deal of thought. Among the questions being decided upon are these: Whether the utility will definitely do no inside wiring, will not handle lamp bulbs, wiring materials, accessories, lighting fixtures, or even small appliances, providing they may sell larger appliances or appliances requiring pioneer effort and time paper selling; whether they will discourage employee courtesy discounts other than strictly regulated electrical merchandise; how they may rotate dealers' merchandise displays in company stores; how utilities may assist in trade relations; how they may do stuffer advertising, mentioning offers made by other dealers; and how they may do their own advertising as respects prices, special offers, time payments or otherwise. While not specific, the foregoing sets down some of the fundamental points at issue.

From this it will be seen that the utility executives of these companies are willing to go far toward cooperation.

Beginning with The Washington Water Power Co., one of the most aggressive merchandisers in the West, this company sought many times to work out plans for cooperative sales features with dealers. This year it made a greater effort than ever in its offering of free wiring for every range sold, assisting the dealers to furnish this sales incentive also. (See p. 178, this number.) Sales during July and August in cooperation with dealers added approximately 500 new ranges. During the same time 600 refrigerators were sold in the territory. The company, however, was active in small appliances and sold

Since Cooperation Is a HUMAN and not a MECHANICAL Problem, Here Are Some Things the Utilities Must Do to Obtain It—

1. They must be *Sincere*. No counterfeit will stand the acid test of skepticism and suspicion.

2. They must be *Fair* and *Square*. Anything else is dynamite.

3. They must be *Patient*, for it takes a long time to *Win* confidence.

4. They must be *Tolerant* of the human weaknesses of dealers who do things under the stress of competition which they themselves cannot explain, because there is no *Reason*—only *Emotion* back of them.

5. They must *Persist* in spite *of Disappointments*, for there will be many.

6. They must *Lead* without *Dictating* or trying to *Buy* a following. *Loyalty* can't be bought or ordered, it is *Earned*.

7. They must *Respect* the dealers, because any tinge of *Superiority* is bound to be magnified and distorted. They are business men entitled to respect whatever their personal viewpoints or deficiencies.

A Sunday school list of virtues? Perhaps so, but with them *any* system of operation will work. Without them, the finest, technically perfect, intellectual triumph of a plan will fail miserably. The mechanism of a plan is not so important as the motive power behind it.

the Industry Are Focused on These Western Trials

three thousand of these in the same three-months period.

Until this recent range wiring offer, efforts at securing cooperation from dealers were disappointing in the extreme. Every campaign frittered out and ended in dull, sickening inertia. There had been no particular rancor in Spokane, some dealers admitting dealer indifference was causing power company activity, others feeling the company had stimulated the electrical market. The fact that years of range selling effort have made electric cooking first choice is to be credited to the power company.

Dealers complain only that company employees on service calls imply that the dealers' appliances are not up to standard. The differences here are evidently trivial and easily adjusted. The company seems to be making a genuine effort to get the cooperation of dealers. The next move appears to be that of the dealers.

Pacific Power & Light Co. last year and early this year made radical changes in its merchandising plans in an effort to get dealers to take on a bigger share of selling. The method has been outlined in previous articles (see ELECTRICAL WEST, March 1, 1931, p. 147, and June 1, 1931, p. 609), and has been in operation for some time. Dealers join the company in premium offers, as indicated by the advertisement illustrated herewith and have all the advantages offered them possible.

How some of them feel about it is attested by the following letter, typical of many received by V. H. Moon, merchandising manager:

NOLAND ELECTRIC COMPANY
Walla Walla, Wash.
June 27, 1931

Pacific Power & Light Co.,
Walla Walla, Wash.

GENTLEMEN:

The plan by which you have made it possible for our company to purchase and sell electric ranges and water heaters has now been in effect approximately six months.

Sufficient time has thus elapsed to enable me to fairly analyze the set-up and I take this occasion to inform you of my satisfaction with and appreciation of the efforts of the Pacific company to so cooperate in the sale of this merchandise.

The fact that it is possible for me to purchase through you Westinghouse ranges in accordance with your set-up, your cooperation in advertising in its various forms and the facilities for credit extension through your financing plan to my customers all tend to make it possible for me to sell electric ranges with greater facility than would be possible under other circumstances.

It is a fact that the present price of farm produce, particularly wheat, has had a severely adverse effect upon this type of merchandise, as well as other types, this year and, as a consequence, our ability to close sales has been greatly hampered. However, I am definitely of the opinion that the plan you have made available to us is sound and will result in a wider distribution of merchandise than would be possible without the harmonious activities which are a direct result of your plan. Personally, I want you to know that you can depend upon our continued cooperation.

Cordially yours,
NOLAND ELECTRIC CO.
By HOMER V. NOLAND.

Taking but the one indication, the plan might be considered a success. The plan is successful as a plan, except that very few ranges have been sold.

It is unfortunate for both dealers and utilities that many efforts at cooperation have been begun during this period of declining buying power and financial stress. No one will ever know whether the utilities sales forces could have made a better showing alone or whether the dealers could have matched former sales quotas had it not been for the depression. The point can become one of endless controversy, each accusing the other of failure at a crucial time. The dealers may be inclined to feel, as they do in one instance with another utility, that the power company only unloaded itself of its heavy, expensive merchandising department when it saw itself facing a big decline in sales. The utility may be inclined to feel that dealers have cried for a job that was beyond their strength. Such controversies are endless, bring nothing but bad blood, and are detrimental to genuine solutions of this real problem.

In the case of the Pacific Power & Light Co. such accusations are not made on either side. A conscientious effort is being made to evolve a real cooperative program. The results so far are not all that could be desired in sales. From May 1 to July 8 dealers sold 88 ranges and 89 water heaters.

Coast Counties Gas & Electric Co., operating in the Santa Cruz, Watsonville and Gilroy area, Calif., at a meeting on June 12, 1931, called by the Pacific Coast Electrical Bureau at Santa Cruz, enunciated its cooperative policies to the dealers in its territory. (See ELECTRICAL WEST, July 1, 1931, p. 40.)

Out of this meeting there developed a better understanding and relationship between the dealers in the territory and the company. Dealers recently have commented that the improvement in salesmen's procedure has been noted and, except for the fact that sales are so difficult to consummate on any occasion, making for a greater desperation on the part of salesmen to close sales in some instances, there is no complaint to be made about the manner in which the company is conducting its cooperative operations.

Another interesting sidelight has been the running of a special cooking school by the dealers themselves in conjunction with the Santa Cruz *Evening News*. In this the power company had no part, the five dealers handling the entire show themselves. The show was attended by 1,860 people and brought ample results to justify its existence. The chief benefit, the Santa Cruz dealers who staged the show agree, was the moral effect upon themselves. The very fact that the dealers were able to get together to put on the performance together and to complete the job in a workmanlike man-

Since Dealers Cannot Expect Cooperation Without Giving It Here Are Some Things They Must Do—

1. Really assume the job of load building for the utility. This means taking the responsibility for failure as well as success.

2. Set sales quotas and achieve them.

3. Train and place a specialty sales force in the field to do selling of ranges. Only by such a method can the job be done.

4. Display, advertise, promote and stimulate range business. Demonstrate and teach users. Follow through the sale to satisfaction.

5. Really pay attention to major electric appliances, instead of becoming side-tracked to fuses, bells and buzzers.

6. Maintain the pace set by the power company sales forces and take full advantage of the acceptance built up by their efforts.

7. Tolerate no practices among themselves which they would criticize in the utility if it were doing them.

8. Get along together. This means with competitors as well as with the utility.

9. Let bygones be bygones. Start a new deal without carrying any hangovers from the past.

ner has cemented their internal relationship in a way nothing else could have done. A splendid team spirit has been developed which will make for increasingly better conditions in the future.

Pacific Gas and Electric Co. perhaps has made the most conscientious and thorough effort at developing dealer cooperation of any utility in recent months. Some details of the results of such activity and the methods employed in achieving them are outlined in articles in this issue. (See pp. 168, 184 and 188.)

Specially noteworthy among these are the cooperative drives in which the company sold no merchandise itself, particularly refrigerators and electric ironers. Here the company acted as sponsors for a united campaign put on by the dealers, who were building load for the power company.

In the range campaign of the company, dealer sales accounted for more than half of the compaign total.

Although for the entire elapsed time since Jan. 1 the quotas are not being met either by the direct sales of company salesmen or dealers, the company feels that its cooperative activity is progressing satisfactorily. "I make no bones about telling both our own salesmen and the industry at large," said H. N. Carroll, manager of electric sales, "that I consider we are all doing a very poor job as far as the entire electrical market is concerned. We have all got to do better than this." The interesting part of Mr. Carroll's comment is the use of "we" in its broadest sense, including both the company and the cooperating dealers.

In order to make its cooperation actually effective, the company has taken the necessary step further which many plans seem to lack, that of having in the field definitely assigned cooperative contact men. These men are given a territory and are required to call upon all dealers in that territory at least once a month and in many specified instances weekly. A report form is made out and with the dealers' confidence these reports are filled in to show the amount of load placed on the company's lines by the dealers during the past month. These reports are broken down into various classes of appliances and give for the first time a real market analysis of electrical distribution in the company's territory.

At first these questionnaires were regarded with some suspicion by the dealers but as it becomes apparent that the company has not been making use of the information against the dealers' interests but rather in an effort to keep the entire market stimulated for dealer sales, especially on appliances which the company itself is desirous of developing, these reports are growing more and more complete.

Another outgrowth has been a series of cooperative dealer-power company range and appliance expositions in various divisions. A most successful one was recently staged in the North Bay division at San Rafael. Cooking schools were held under the auspices of a local newspaper, dealers maintained elaborate and expensive displays of appliances, joint advertising was done in the local papers, a large attendance, so large in fact that numbers were turned away from the afternoon classes, attested to the success of the plan.

An interesting sidelight is the fact that during a recent regional meeting of the Northern Chapter, California Electragists, held in Oakland, Calif., for the first time the session was featured by an entire lack of comment about power company merchandising.

The answer to the eternal question of cooperation in this instance seems to be that when cooperation gets personal attention it has a much better chance of succeeding.

Vallejo, Calif., served by *Vallejo Light & Power Co.*, not long ago was assailed by a movement for public ownership of its distribution system, an angry outgrowth of misunderstanding between dealers and the utility over merchandising and contracting. Today, a month or so later, after a series of meetings between dealers and the utility in which the various points at issue were discussed frankly and a new plan of operation was evolved, an entirely different attitude exists. Early in October a joint exposition and electrical show, in which all the dealers in the city and the utility are participating, begins the operation of the new drive for electrification of the community. In this case, as in others, an amicable understanding was reached by personal contacts, the thing which had been lost during months of private concern with their own affairs on the part of both dealers and the utility.

When premiums are offered by this company, dealers are given the ware at no cost

California Oregon Power Co., Mountain States Power Co., Southern Colorado Power Co., and San Diego Consolidated Gas & Electric Co., all Byllesby properties, are operated under the standard Byllesby practice. This practice calls for the maintenance of list prices, the handling only of high-class merchandise, and a general ethical procedure of the business. In Medford, Ore., The California Oregon Power Co. does not itself merchandise because of the fact that the city is served by three very active contractor-dealers who are doing an excellent job of load-building for the company.

Much of the Mountain States Power Co. territory is in small localities throughout the West. The company's merchandising operations were described in detail in an article in ELECTRICAL WEST, Oct. 1, 1930, p. 180.

Dealer relations in the San Diego Co.'s territory are not aggravated, yet dealers do feel the effect of the company's special campaigns on appliances. The company

maintains stores at its several branch offices throughout the territory, in each of which is an attractive merchandise display and from which its specialty salesmen operate. The effect of these operations has been greatly to increase the amount of appliance business in the company's territory. Dealers claim that much of this load is at their expense and yet for the several years prior to the company's entry into merchandising, little effort was made by dealers to promote this appliance business in an extensive manner. A chaotic dealer condition is contributed to by an over-saturation of contractor-dealers in the territory and ruinous competition in the wiring field. The company has indicated that it was forced into the merchandising situation by the fact that it was being made the victim of these external industry ills.

Southern California Edison Co. has long been in the eyes of the nation because of two large-scale experiments in cooperation conducted in two divisions of that company. A nation of merchandising executives was brought to attention recently by the company's withdrawal from merchandising in the Long Beach division, and the turning over to the dealers of the responsibility for load-building in that territory. Immediately following this an experiment on a different basis was inaugurated in the Tulare territory, in which a contract was entered into between the dealers and the company whereby the dealers assumed the job of meeting the company's quota in ranges and refrigeration for the year. (See ELECTRICAL WEST, Dec. 1, 1930, p. 307, and May 1, 1931, p. 257.)

Subsequent reports on the Long Beach experiment have been very discouraging. Evidently the misunderstandings and difficulties which prompted the utility to make the experiment of cooperative merchandising in the Long Beach territory have not been entirely dissipated by the operation of the plan. The dealers still complain of some features of the utility's operation, or lack of it, blaming their own lack of results on business conditions, natural gas competition, an astounding decline in the building market, lack of organization on their own part, and lack of direction in sales effort, their unpreparedness to take on the job at the time it was given to them, and similar reasons. The utility, on the other hand, declares itself disappointed in the results and discouraged over the outlook. There still remains considerable feeling on both sides relative to the situation, which would indicate that all of the personality factors had not been satisfactorily adjusted. The details of the plan seem to have all the necessary requisites for a good working arrangement. So far, the failure can be attributed variously to the general business conditions and to a discouraged and suspicious frame of mind on the part of the dealers which has not been alleviated.

In the Tulare district the dealers have an entirely different attitude, although one which is somewhat belligerent. There the dealers claim they are making excellent headway and point to the fact that their refrigeration sales are above quota, as an indication of their ability to carry on the job successfully. At least, they have a strong determination to prove to the Edison company that they can handle the job entirely themselves.

Throughout the Edison company's system its cooperative merchandising plan has been extended by means of a series of meetings in which H. C. Rice, merchandising manager, and others of the headquarters staff have called both dealers and sales forces of each division together to explain the workings and the purposes behind the company's cooperative program. A standard range wiring arrangement has been worked out for the entire system, special appliance offers are extended to dealers to make to their own customers, as well as those of the utility, the advertising of the company carries a line advising readers to patronize their electrical dealer or the power company store, and many similar efforts are being made to bring the company closer to the dealers in the territory. Considerable progress has been reported both by dealers in the Edison territory and the Edison company itself in this work. The actual final results of the two outstanding experiments are not yet sufficiently conclusive to be considered decisive.

Idaho Power Co. has in operation a plan whereby range sales made by dealers count in district quotas and wherein company salesmen finding a dealer working on a prospect assist that dealer in closing the sale. The agricultural salesmen work very closely with the dealers of the equipment for farm electrification, none of it being handled by the company itself. The engineering advice of trained agricultural salesmen is added to the sales staff of the dealer. Results from the range cooperation method were declared by M. L. Hibbard, vice-president and general manager of the company (see ELECTRICAL WEST, Dec. 1, 1930, p. 305), to be sufficiently encouraging to consider extending the policy to other major appliance sales.

Sierra Pacific Power Co., at Reno, Nev., last year was subjected to one of the epidemics of anti-merchandising legislative bills, such as have been passed in Kansas and Oklahoma. The bill failed to carry and truce has been established between company and dealers, although few changes in merchandising policy have been made. The utility is doing a splendid job of merchandising, selling approximately $250,000 in appliances a year in a territory of small communities, its largest city, Reno, being one of 18,000 people. Dealers are given the wiring for the 500 ranges sold by the company, distributed equally among them, an item of approximately $25,000 a year in wiring. Some of the original sponsors of the bill to prohibit merchandising by the utility seem inclined to resubmit it next year.

Conclusions that can be drawn from the entire cooperative picture are few and distinct. The actual plan in operation seems to be less important than the manner in which it is administered. The San Joaquin Light & Power Corp. plan, which has been plugging along successfully for six years, has been considered a model plan for some time. (See ELECTRICAL WEST, Oct. 15, 1926.) It would not be successful without diligent supervision by the officials of both the power company and its merchandising subsidiary, the Valley Electrical Supply Co. The plan in operation is constantly being subjected to variations of new problems and changes of attitude on the part of those participating. Each of these must be handled in an individual manner. Each problem has to be solved by the most humane and fair-minded action.

The utility, as the party whose stake is the greatest, must assume leadership, but do it in such a way as to win the confidence and respect of its cooperating dealers. This requires constant attention and contact. It seems to be an eternal job, a job of maintaining favorable and friendly relationship.

Friendship is not a matter of merchandise. Loyalty and a determination to accomplish something for the benefit of a friend are nothing that can be bought or arrogantly ordered. Gratitude is a very elusive quality which springs from a spontaneous source and is not something which can be derived from a burdensome sense of obligation or indebtedness.

Therefore, the success of cooperation is the success of friendship built up and maintained. It is a human problem, chiefly, and can be solved only by these human agencies. But it can be solved.

Institute Convention at Tahoe a Success From Every Standpoint

JUDGED from every standard, the A.I.E.E. convention at Lake Tahoe, Calif., Aug. 25-28, was a complete success. Early pessimism regarding the attendance was dissipated by the registration of 249 participants in the four-day activity of the meeting. Of this total there were 127 members of the Institute, 28 student members, 69 ladies, 15 registered guests, eight children and two guests of the Institute. Student attendance was particularly gratifying to the officers of the Institute, and indicated that the movement for more active student participation in Institute affairs is succeeding.

Eastern members attending the convention included Dr. C. E. Skinner, president of the A.I.E.E.; F. L. Hutchinson, national secretary; G. R. Henninger, associate editor of *Electrical Engineering*, New York; Dr. W. A. Lewis, of the central station department of the Westinghouse company, East Pittsburgh, Pa.; J. J. Pilliod, New York; H. R. Huntley and H. S. Hamilton, of the American Telephone & Telegraph Co., New York; G. D. Floyd, of the Hydro-electric Power Commission of Ontario, Toronto; and C. F. Green, of the General Electric Co., Schenectady, N. Y.

A. W. Copley, Westinghouse company, San Francisco, vice-president of the Institute and general convention chairman, opened the convention by presenting Dr. Skinner. The latter briefly outlined the early activities of the Institute during the rapid development of the electrical industry between the years 1890 and 1910. In his opinion, the machine age is responsible for many of our present social problems and in addition to research for future applications of electricity, the engineer will be called upon to help solve the social and economic problems which confront our present-day civilization.

At the general session C. E. Grunsky, of San Francisco, president of the American Engineering Council, addressed the convention on "Business Cycles and Some Economic Problems." Mr. Grunsky outlined the fundamentals of over-production, which is a dominant factor in causing the low spots in the cycle. As over-production is subject to little control, the remedy must be found in new markets or new industries, and the speaker suggested a super-governmental body to regulate trade between nations. As a further check or balance, a supplementary monetary unit whose value would be based on an index commodity price list would tend to prevent excessive inflation or deflation of currency. His address was vitally interesting and presented a new aspect on international business affairs.

Electrical Machinery and Applications

C. E. Carey and K. L. Howe, of the Westinghouse company, Seattle, presented a paper entitled "Electrical Power in the Wood Products Industry," in which the power requirements of lumber and pulp mills were detailed and future developments and energy requirements of 2 billion kw.-hr. annually in these industries were predicted. A similar paper, titled "Some Adaptations of Electrical Equipment for Oil Field Operations," by H. C. Hill and J. B. Selegue, General Electric Co., Los Angeles, discussed the peculiar requirements of equipment for oil field operations.

In his paper on "Induction Motor Design," V. Hoover, of California Institute of Technology, Pasadena, presented a new angle from which to attack and analyze induction motor design problems. Numerous equations were presented by which the motor constants were obtained through evaluating the proportionate relation of design factors which produce the best results.

A new method for determining the stray load losses of large hydraulic turbine-driven generators at short-circuit and under-rated load was presented by G. D. Floyd, of the Hydro-electric Power Commission of Ontario, and J. R. Dunbar, of the Canadian Westinghouse Co., Ltd., Hamilton, Ontario, in their paper, "Calorimeter Measurement of Stray Load Losses." This method presupposes an enclosed system of ventilation on the machine. By means of thermal or calorimeter tests, the technique of which is given in the paper, data are obtained to calculate the stray load losses of the machine under the conditions outlined. Results indicated that the stray load losses under short circuits and at rated loads are approximately equal, being about 50 per cent of the stator proper loss at rated load.

Session on Transmission and Distribution

An analysis of the cost of serving heavily loaded sections of business districts was presented by S. B. Clark, Northwestern Electric Co., Portland, whose company adopted a duplicate 11-kv. primary feeder system with an isolated network secondary to serve the Portland business district. This system was to supplement the existing three-wire d.c. service and the three-phase 2.4-kv. radio primary feeder system installed in 1920. Installation of the new underground system involved the design of compact vaults and a special junction box. Possibilities of submersion were precluded by the use of a small sump pump in each vault, the concrete vault walls being made as watertight as possible. Cable burnoffs were not provided for, the junction boxes being provided with heavy fuses.

A technical description of the Mokelumne development of the Pacific Gas and Electric Co. was presented by E. A. Crellin of that company. His paper outlined the methods by which the entire flow from a huge watershed was utilized for successive generating stations. E. M. Wright and B. D. Dexter, also of the P. G. and E. Co., continued the description of the Mokelumne project.

In "Tie Line Control of Interconnecting Networks," by C. A. Powel, of the Duquesne Power Co., Pittsburgh, Pa., and T. C. Purcell, of Westinghouse,

Western educators at the convention pause between sessions to share a peanut with Jimmy, a permanent guest of Tahoe Tavern. Left to right: Prof. F. O. McMillan, Oregon State College; Prof. W. G. Angermann of the University of Southern California, and his daughter Patricia; Dale Hansen, student chairman, Oregon State College; Prof. E. C. Starr, Oregon State College (standing); and Prof. G. L. Hoard, University of Washington

a subject of particular interest to West Coast engineers was presented. This paper dealt with the problem of controlling the power flowing over a light tie line connecting two systems. Frequency control for the interconnected system was carried by one station at the end of the tie line, making load changes on the associated system appear both in the tie line and in that station.

This undesirable feature was overcome by a load control installation in the station at the opposite end of the tie line from the frequency control. The effect of this load-control in the tie line is to cause the latter station to follow increments of load change which the frequency-controlled station has made to maintain system frequency.

Considerable discussion was evoked on the various points brought out by the paper of Philip Sporn, of the American Gas & Electric Co., advocating the use of frequency control in each station of interconnected stations or systems. Nathan Cohn, of Leeds & Northrup Co., San Francisco, commented on the merits of both frequency and load control. However, Mr. Cohn stated that in his belief each installation involves special conditions which can best be met by individual treatment.

The results of his research on transmission lines were presented by H. H. Skilling, of Stanford University, in his paper, "Tuned Power Lines." He suggested that both power transmission and stability might be improved by the use of higher frequencies than those in present commercial use.

Session on Communication

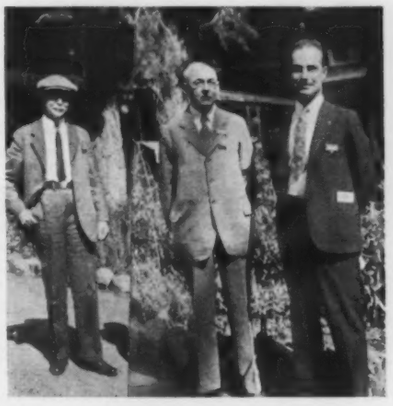
"Intercontinental Telephone Service," a paper by J. J. Pilliod, of the American Telephone & Telegraph Co., brought out the recent changes and advances in transoceanic radio communication. The Pacific Coast, in the new San Francisco-Hawaii stations now under construction, will have one of the most modern communication systems existing in the world today. E. M. Calderwood and D. F. Smith, of The Pacific Telephone and Telegraph Co., in their paper, "The San Francisco-Los Angeles Section of the Pacific Coast Cable Network," outlined the development of the long-distance telephone network of the Pacific Coast and the steps by which the transformation from open wire to cable is being accomplished.

Problems of air navigation also come within the scope of the electrical engineer as proved by C. F. Green, of the General Electric Co., Schenectady, in his paper on "Electrical Solutions of Problems of Regular Scheduled Flight."

A. L. Albert and W. R. Bullis, Oregon State College, presented an electrical method of measuring the sound absorbing properties of various materials. This device utilizes the variation of the impedance of a loudspeaker when subjected to reflected sound waves. Through a bridge, readings are translated in the relative characteristics of the material.

Electrophysics

The "Cathode Drop in Arcs and Glow Discharges" was discussed by S. S. Mackeown, assistant professor, California Institute of Technology. The paper dealt with his theory of the mechanism which produces an electric arc. Transition from a glow discharge into an arc involves the presence of a large number of electrons near the cathode. In a tube energized to the point of glow of discharge, the cathode drop is constant until the entire cathode is covered by the cathode glow. If the current is increased beyond this point the cathode drop increases and



C. E. Grunsky, president of the American Engineering Council, who suggested some remedies for international business ills; F. L. Hutchinson, A.I.E.E. national secretary, and G. Ross Henninger, associate editor of the Institute's publication, "Electrical Engineering"

the distance that it extends decreases, such conditions being known as the abnormal cathode drop. This effect intensifies the electric field existing in the cathode drop and consequently increases the energy of the positive ions as they hit the cathode. This in turn produces a larger number of electrons from the cathode by bombardment. Electrons thus freed from the cathode will produce ionization which will be more intense near the active spot on the cathode surface. Due to high mobility the electrons will disperse into the body of gas, leaving behind them charged gas ions which will in turn increase the field, making the process cumulative until the field existing at this active spot is high enough to pull electrodes out of the cathode surface at which condition an arc exists.

Further experiments described in "The Kindling of Electric Sparkover," by Prof. C. E. Magnusson, of the University of Washington, produce evidence which tends to prove (1) that electrons, not protons, are the active carriers in the kindling mechanism; (2) Lichtenberg figures form the initial step in the kindling process, and (3) sparkover channels developed from the positive Lichtenberg figure and the sparkover pass tend to follow the positive and negative Lichtenberg figures.

In light of the recent dry years, the paper entitled "Snow Surveys" by Prof. H. P. Boardman, of the University of Nevada, was extremely timely. The apparatus, technique, and results of the Nevada cooperative snow surveys have proved that snow surveying is useful for forecasting purposes.

C. C. Campbell, of the Pacific Gas and Electric Co., San Francisco, and H. N. Kalb, of the P. G. and E. Co., San Francisco, Calif., presented their experience in radio interference problems in northern and central California in a paper entitled "Radio Coordination." While this is no simple problem, the authors feel that a spirit of cooperation between the utilities, electric manufacturers and the public is the only means by which it can be brought to a successful solution. The interference from electric power supply systems seems to be well in hand except for troubles originating in high-voltage lines which are still under consideration. Much of the burden falls on the manufacturers, who have a great opportunity in the sale of radio—noise-proof appliances and apparatus. Increased broadcast coverage is desirable to offset the maximum noise levels in many of the large areas now having low field strength.

Student Sessions

Two excellent student sessions and a student breakfast and conference were held. Papers presented by the students were as follows:

"Laboratory Study of Transmission Lines," by D. J. Moore, A. A. Petrick and D. D. Johnson, University of Washington; "Residual Currents and Voltages in Power Systems," by C. A. Bairos and G. S. Kimball, Stanford University; "Effects of Short Circuits Upon the Stability of a Transmission System," by S. G. Winkler, University of Southern California; "Influence of Preservatives on the Dielectric Strength of Wood," by C. B. Parsons and M. H. Tipton, Oregon State College; "Some Electrical Methods of Geophysical Prospecting," by F. M. Holly, Jr., Montana State College; "Vacuum Tube Voltage Regulators," by E. W. Palmrose, University of California; "The Thyratron Inverter," by G. A. Ross and L. W. Russell, California Institute of Technology; "The Reflex Thermionic Voltmeter," by L. W. Thorpe, University of Santa Clara; "Acoustics of Kingsbury Hall," by F. Lundberg and F. N. Neal, University of Utah; "Torque Angle Characteristics of Synchronous Motors," by W. F. Arndt, California Institute of Technology, and "Sound Picture Systems," Charles Douglas, University of Nevada.

At the annual golf turnament, M. S. ("Shorty") Barnes, of the G. E. Co., San Francisco, with the low net of 62, won the Fisken Cup as well as the choice of low net and low gross prizes. N. H. Callard, Pacific Coast central station manager of the Westinghouse company, took the "kickers' " handicap first prize. Numerous other prizes were distributed.

Seattle Buys Unfinished City Light Building

Terms of an agreement by which the City of Seattle will purchase for $189,300 the uncompleted portion of the new City Light Bldg., started as a private enterprise, have been agreed upon by a city council committee and members of the City Light Bldg. Co. The figure was fixed by the Board of Public Works after a survey and appraisal of the virtual value of the work done, including materials and labor.

It was also agreed that the City Light Bldg. Co. will place in escrow a sufficient amount from the $189,300 to reimburse purchasers of preferred stock in the building project in full for the actual amount they have paid on this stock, without interest. This is estimated at $104,000.

The proposed settlement has been accepted by the Sound Engineering & Construction Co., which had the contract for the building, and Earl W. Morrison, architect who drew plans. Both suffer a loss under the agreement, the amount they will receive being $45,000 less than they were claiming.

Under the deal, the city gets a subbasement and basement, the part of the project which has been completed. This will furnish quarters for substation equipment for City Light to serve the downtown district.

Tentative plans of the city council provide for construction of two stories, one to house City Light salesrooms and offices, and the second to provide other needed office space for the lighting department. If this plan is carried out, an issue of City Light utility bonds will be voted by the council to finance the project.

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Commissioner Protests Federal Prerogative

Oregon's regulatory commissioner, Chas. M. Thomas, intends to request other state utilities boards to join in petitioning Congress to enact appropriate legislation to safeguard the rights of state commissions against "a seeming attempt of federal courts to invade and destroy the rights in question." The Oregon commissioner declares that it is possible that the federal district court of Portland will decide that evidence presented at a hearing before the commissioner is not admissible for consideration in a suit now before that tribunal permanently to enjoin the state from enforcing a commission order reducing Portland street car fares from 10c to 7c. In this event, says the commissioner, all state regulatory powers will be destroyed and every reason for having an expensive investigation and hearing on any utility will be eliminated. "Then," asserts Commissioner Thomas, "the proper course for a state commission would be to make its order without expensive hearings and have the first trial in the federal court."

From the transcript of testimony taken during the injunction hearing it is indicated that the plaintiff, the Portland street car utility, based objection to the admission of the commissioner's investigatory evidence on the grounds that both counsel for the commissioner and the chief engineer of the commission admitted that the data assembled were largely speculative in character and that nothing in the order reducing the transportation fares in Portland was to be considered curative in so far as controversy was concerned between the patrons of the system and the utility. The street car company is attacking the commissioner's order on the grounds that its enforcement will constitute the confiscation of property and that insufficient evidence has been introduced by the commission to warrant a reduction of 3c. in Portland car fares.

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Tacoma Power Users Want Puget Sound Co. Franchise

The city council has received a petition signed by more than 200 industrial power users urging that favorable action be taken by the council on the application of the Puget Sound Power & Light Co. for a new franchise in Tacoma. Representatives of the Chamber of Commerce who presented the petition state that some industrialists refuse to locate in the district where there is only one source of power and expressed the fear that unless the franchise is granted Tacoma will arouse the enmity of the power interests and feel the effect in the failure of new industries to locate in the territory.

It was also pointed out that Tacoma will lose the district headquarters of the Puget Sound Power & Light Co. with its annual payroll of $235,000 and its purchase of supplies in this district of between $450,000 and $500,000 annually if the franchise is refused. The only one to benefit by refusal of the franchise would be the Tacoma municipal lighting department and it would net not more than $12,000 per year from the business now done by the power company in the city, it is claimed. The city as a whole, the petitioners argue, would lose far more than this. Last year the privately owned company had gross earnings in Tacoma of $63,300, against the $2,211,000 gross sales of the municipally owned plant.

The council referred the petition to the committee of the whole where the application of the company for a franchise has been pending for several months. The company is asking the renewal of its old franchise for a term not less than the unexpired term of its county franchises under which it is not selling power on parts of the tideflats. The county franchises run to 1941 and 1942. Under the old franchises the company could not sell current for light or in units of less than 25 hp.

Fresno Attorney Asks Separate Rate Hearing

On the ground "that Fresno, Calif., has been the victim of unreasonable and discriminatory power rates for years and that it has been compelled to subsidize other interests at the expense of its own rate payers and consumers," Claude Rowe, city attorney, moved for a separate hearing for the city when the hearing before the California Railroad Commission in the matter of fixing permanent rates to be charged by the San Joaquin Light & Power Corp. and its subsidiary, the Midland Counties Public Service Corp., was reopened in Fresno on Sept. 15.

Mr. Rowe explained that he was referring to the *ad interim* rate schedule, which on authorization of the Railroad Commission had gone into effect on May 1 and continued until Sept. 1, and which, he said, had discriminated in favor of the agricultural interests of the territory on sympathetic grounds. He contended that the consumers of Fresno had been compelled to surrender their rights to lower rate cuts in order to provide for larger cuts to the farmers because of the latter's economic need. By moving for a separate hearing Mr. Rowe said he hoped to avoid any discrimination against city consumers in favor of any other interests.

C. P. Cutten, counsel for the San Joaquin company, objected to Mr. Rowe's motion on the ground that two hearings would be a waste of time. Railroad Commissioner M. B. Harris, before whom the hearing was held, ruled that no consideration of Mr. Rowe's motion would be undertaken until the case of the power company had been presented, and adjourned the hearing until Nov. 17.

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Engineer Advises Against San Diego Diesel Plant

Lester S. Ready, San Francisco consulting engineer employed by the common council of the city of San Diego, Calif., to determine the advisabilty of installing diesel equipment to serve a downtown lighting district, strongly advised against such a move in a report submitted to the council Aug. 25. Mr. Ready gave as his opinion that the installation of this equipment, as proposed by the Fairbanks-Morse Co., would increase the charge for street lighting service during the first five years' operation about $30,000 anually, and "that the average cost over a long period of time of street lighting service by a city-owned diesel engine plant would not be less than that which the city should experience through the purchase of this same service from the San Diego Consolidated Gas & Electric Co." The engineer gave it as his opinion that the power company "can and should reduce the charges for street lighting service in the city at this time by approximately $4,000 below the charges resulting from its proposed rate, provided the specifi-

cations for street lighting maintenance and operation are modified to comply generally with its proposal."

In his report Mr. Ready set forth his belief:

1. That the city would get nowhere by asking for separate bids for current for ornamental lights and for maintenance of the standards.

2. That the most economical way to bring about a reduction in rates for current is to apply to the railroad commission and have the rates fixed.

3. That further reductions in cost of current should be expected either by taking the matter up with the commission or by negotiation with the power company.

4. That the city of San Diego today is obtaining a better class of service than other cities throughout the state but the city is paying for it and will have to continue to pay for it.

5. That it probably would not be feasible for the city to go into the power business with a plant of sufficient size to furnish current to consumers throughout the entire city as well as for ornamental lights.

6. That general lighting as "supplied by the San Diego Consolidated Gas & Electric Co. through use of its general overhead system . . . is so scattered that it would be entirely uneconomical for the city to serve other than the central area," if it should operate a power plant.

Mr. Ready also has been instructed by the council to prepare reports both on the feasibilty of bringing natural gas to the San Diego territory and of the city's going into the manufacture and sale of gas and electricity in competition with the private company now in the field.

▼

Puyallup to Take Over Utility's Holdings Nov. 1

Final settlement of the city of Puyallup's (Wash.) power situation was reached recently when the city council unanimously voted to take over the Puget Sound Power & Light Co. holdings in the city on Nov. 1. The council passed three readings of an ordinance to issue $250,000 worth of bonds of $1,000 denomination, each with interest not exceeding 6 per cent for the purpose of taking over the company's holdings.

E. K. Murray, city counsel, advised the city to take possession as soon as possible, estimating the saving to the city on interest and possible earnings would amount to approximately $100 a day. He also stated that the company must furnish power to the city until a permanent source of supply is decided upon.

The action ended a long, bitter fight marked by a number of court battles in which the city was always victorious. The Puyallup voters at an election in November, 1928, by a vote of 7 to 1 decided to acquire their own power plant, and elected to issue $250,000 worth of bonds for the purchase. In the condemnation suit the company claimed that its holdings were valued at $400,000. A jury decided in favor of the city with a verdict of $216,000. Taken to the circuit court of appeals at San Francisco, the decision of the federal court at Tacoma was upheld.

Building Good Will for Puget Sound Co.

Favorable public reaction, evidenced through newspaper editorials and letters, has met the new series of institutional advertising of the Puget Sound Power & Light Co., Seattle. Commenced in recent weeks and appearing throughout the territory served, this advertising has stressed the business philosophy of the new management, has pictured the place occupied by the company in the growth and development of the state, and has begun to portray vital facts bringing out the strong community interest between the company and the public it serves

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Suit to Test Legality Of Idaho Kw.-hr. Tax

An injunction suit to restrain the commissioner of law enforcement of the state of Idaho from collecting the ½-mill kilowatt-hour tax on power generated by the municipal plant of Idaho Falls has been filed by the city attorney of that community and a temporary injunction has been granted by the district court.

The suit involves the constitutionality of the new tax law as it pertains to municipally owned generating systems. The attorney general of the state had previously rendered an opinion that the municipality would have to pay this tax just as any other generating agency. (ELECTRICAL WEST, Sept. 1, 1931, p. 141.)

▼

Commission Starts Oregon Water Power Hearings

For the first time since its creation by the 1931 Legislature, the Oregon Hydro-Electric Commission will, on Oct. 5-6, undertake the holding of formal hearings of water power applications involving major hydro-electric developments in this state.

Among these applications is that of the Oregon Light, Power & Irrigation Co., which covers a permit to appropriate 750 sec.-ft. of water from the Clackamas River for power purposes. The commission will also hear the application of O'Neill Brothers & Callaghan which involves the appropriation of 650 sec.-ft. of water from the North Fork of the Santiam River for the development of 7,755 hp. Wallace Huntington, another applicant, will be given a hearing regarding his proposal to appropriate 750 sec.-ft. of water from the McKenzie River and Clear Lake for power development supply.

▼

New Rates Adopted on Vancouver Island

New domestic electric rates will go into effect in the Greater Victoria (B.C.) area Oct. 1, according to a recent announcement of A. T. Goward, vice-president in charge of the Vancouver Island division of the B. C. Electric Railway Co., Ltd.

In the new rates the floor-area system of computation has been adopted, and the separate meters formerly compulsory for electric ranges have been eliminated.

Under the new schedule, in the city of Victoria and the 3-mi. circle surrounding it, the charge will be 6c. per kw.-hr. for the first 3 kw.-hr. per 100 sq.ft. of floor area, and 3c. per kw.-hr. for all additional. The monthly minimum charge for lighting is 75c. or $2.25 with electric range. The minimum floor area is 1,000 sq.ft., and the maximum 3,000 sq.ft.

Areas outside the 3-mi. circuit will pay a rate of 8c. per kw.-hr. for the first 3 kw.-hr. per 100 sq.ft. of floor area, and 3c. per kw.-hr. for all current used in addition. The monthly minimum charge for such homes will remain as at present at $1 for lighting or $2.50 with electric range.

L. A. Water & Power Investigation On

An investigation of the Los Angeles Department of Water and Power, ordered by the city council, is in progress as this issue of ELECTRICAL WEST goes to press. Harlan G. Palmer, Hollywood newspaper publisher and a former member of the municipal board of water and power commissioners, is associate counsel for the city council.

James M. Hyde, member of the city council, is chairman of the council committee conducting the investigation. At the opening session, he announced that the committee merely was conducting a hearing and that no charges had been filed against anyone. The announced purpose of the investigation is to look into the affairs, administration and operation of the department.

▼

Difficulty Besets Utility District Formation

Safeguards thrown around the preparation and filing of petitions for authority to form public utility districts under the recently enacted Oregon law are rendering it difficult to comply with the strict letter of the statute.

The last petition to be denied a filing by the commission was presented by the voters of the Triangle Lake district, the department's counsel who examined the articles holding that they neglected to name and describe the voting precinct, if any, located within the boundaries of the proposed utility district.

Defects in petitions filed ranged from the improper description of the boundary lines of the proposed districts to the neglect to incorporate sufficient information concerning the specific purpose of the projects contemplated in the petitions.

▼

Aqueduct Bonds Voted in Southern California

Voters in Los Angeles and surrounding communities comprising the Metropolitan Water District of Southern California passed by a vote of 5 to 1 on Sept. 29 a measure providing for a $220-million bond issue to finance the Colorado River aqueduct.

The aqueduct will bring to southern California its share of the Colorado's water after the completion of Hoover Dam.

▼

National Grange Proposes State Build Coulee Dam

Adopting as a basis for a state-wide power distribution program one recently outlined by Lewis B. Schwellenbach, Frank P. Waters, deputy master of the National Grange at Wenatchee, announced that if the government fails to proceed with construction of the Grand Coulee irrigation and power dam, an attempt will be made to have the state construct it.

Under the Waters program, an initiative measure pledging the credit of the state to construct the dam will be undertaken, the power to be developed and distributed under the provisions of the Grange power bill adopted last November. Waters takes the position that the state property owners ultimately will have to pay for the development even if constructed by the government, and the state should not wait for federal action.

▼

Application Filed for New Bridge River Project

Application for permission to erect a power dam at La Joie Falls on the Bridge River in British Columbia has been filed with the Provincial Water Board by the Bridge River Power Co., a subsidiary of the British Columbia Electric Railway Co., Ltd. License to impound 100,000 acre-ft. of water, and to take 500 sec.-ft. from Bridge River near Lillooet is sought.

A total of 2,800 hp. would be developed at the site, construction of the dam would flood 3,400 acres, and diversion would take place 500 ft. up-stream from the falls. The project is entirely separate from the extensive Bridge River development of the same company for supplying power to Vancouver.

Another application for development of 1,400 hp. at La Joie Falls is on file by the Branlorne Mines, Ltd., the power to be used for local mining purposes. Hearing before the board will be held at the expiration of the usual 30 days following the filing of the application.

▼

Seattle City Light Soon To Take Over Engineering

In accordance with Charter Amendment No. 2, approved by the voters at the city election last spring, City Light will soon take over from the engineering department full charge of all construction and engineering work for the municipal light and power system. Superintendent J. D. Ross, in a letter to the city council, pointed out that four major contracts at Diablo on the Skagit which the engineering department has been supervising, are nearing completion, and that this would be an opportune time for City Light to assume charge "without confusion of authority or responsibility."

In planning and supervising the Diablo work, the city engineer has used some of the permanent employees of his department, and has also hired a number of special employees temporarily. Mr. Ross wishes to continue a number of these men who are familiar with the work.

▼

L. A. Gas and Electric's New Inglewood Office

New district office opened last month at Inglewood, Calif., by the Los Angeles Gas and Electric Corp. to serve Inglewood, Hawthorne, Lennox, Lawndale and a portion of the southwestern section of Los Angeles. The building was formally presented to the community at an "open house" on Sept. 12. Investment in land and building is approximately $225,000. C. A. Graves (inset) is Inglewood district manager, and E. A. Lodmell assistant district manager

News Shorts

¶ OLIVER POWER CO., not Gunnison Valley Power Co., will supply Rogers Mesa, Colo., with electricity, Colorado's public utilities commission ruled in settling a territorial controversy. Because the former promised apple growers electricity in 30 days to wash 1,500 carloads, the application was granted.

¶ WEST CANADIAN HYDRO ELECTRIC CO. will enter Sicamous, B. C., supplying power from Canoe probably by Nov. 1. Cost estimated at $30,000.

¶ PACIFIC GAS AND ELECTRIC CO. has ordered reconstruction of the 20-mi. Hopland-to-Asti line at a $67,000 cost to meet increasing domestic and agricultural demands. New buildings at Colusa, to cost $13,000, and reconstruction of Lodi substation for $14,800 are also planned.

¶ SAN DIEGO CONSOLIDATED GAS & ELECTRIC CO.'s G. H. P. Dellman, lighting sales engineer, has assisted in installing thirteen illuminated baseball fields in ten communities served by his company.

¶ PULLMAN, WASH., will vote Nov. 3 upon acquisition by purchase or condemnation of Washington Power Co.'s power facilities in the city by issuing $150,000 bond issue. A city council analysis indicated a power company profit of approximately 50 per cent for 1930; Frank T. Post, utility president, brands this as absurd. Municipal ownership studies are also being made in Coeur d'Alene, Idaho, and Clarkston, Wash., both served by Washington Water Power Co.

¶ J. RUSSELL BLAIR, president and manager of Weaverville (Calif.) Electric Co. for 31 years, has sold his controlling interest to Frank Ryan. The company supplies electricity, water and ice to the town.

¶ OREGON HYDRO-ELECTRIC COMMISSION has licensed J. W. Merrifield, Willamette Valley farmer, to appropriate water for domestic power and lighting, the first power license granted under the new water conservation act passed this year.

¶ SALEM (ORE.) CITY COUNCIL is considering adoption of an ordinance for formation of lighting districts within the municipality, permitting each district to decide the amount and type of illumination desired. This is expected to encourage rivalry among districts, providing inducement for citizens to work out the most sightly and efficient illumination.

¶ PUBLIC HEARING dates in connection with investigations of The California Oregon Power Co. rates in Klamath Falls and Medford, and Idaho Power Co. rates in Ontario and Vale, eastern Oregon, will be set soon by the state regulatory commission.

¶ GOLD HILL, ORE., has extended the time limit of an option of Beaver Portland Cement Co. on power sites now held by the city on Rogue River. The proposed $250,000 plant has not been completed in the five years alloted because of litigation instituted by The California Oregon Power Co. to restrain the cement company from diverting the river, so another five years was granted.

¶ BANNING (CALIF.) citizens voted to reject The Southern Sierras Power Co.'s proposal to purchase the municipally owned distribution system for $140,000. The company had also offered a 25 per cent reduction in rates. California Public Ownership League took an active part in the campaign.

¶ ELECTRIC LIGHTING of farm homes made more progress in Oregon during the last decade than tractors, autos, or telephones, U. S. Census figures prove. Electricity showed a 240 per cent increase; autos, 137 per cent; tractors, 121 per cent; and telephones but 5 per cent.

P. C. E. A.

Engineering Section Begins Year's Activity

With excellent attendance and wide representation, the Engineering Section of the Pacific Coast Electrical Assn. opened its first meeting Wednesday, Sept. 16, at the Clift Hotel in San Francisco. Previous organization of the various committees by their respective chairmen under the direction of H. H. Buell, Engineering Section chairman, enabled immediate attention to the work being undertaken by the section.

After the executive committee meeting, held on Wednesday evening, an outline of the activities of the section, as well as the program for their accomplishment, was discussed. The next meeting of the section will be held in the Southern California Edison Co.'s new building in Los Angeles Dec. 9-11. The Mayflower Hotel at Los Angeles will be headquarters for registration.

Representatives from the P.C.E.A. engineering group to the Engineering Section meeting of the National Electric Light Assn., to be held in Cincinnati, Ohio, during the second week in October, will consist of several of the present committee chairmen, as well as members of the executive committee.

The subcommittee on primary and secondary neutral had completed its work and its recommendations were approved by the executive committee. Application to the Railroad Commission of California will be made by a corporation actively engaged in P.C.E.A. work for changes in rule GO-64-A to conform with the recommendations of the subcommittee.

Cooperative work with the power systems engineering committee of the national body will be undertaken by the various corresponding committees of the section.

▼

Accident Prevention Committee

J. N. BUSWELL
San Joaquin Light & Power Corp., Chairman

Activities of this committee will be augmented during the coming year by adding engineers who act in supervisory capacities in construction, operating, supplies, and transportation departments of the utilities. Also, an official representation from the P.C.E.A. executive committee, as well as representatives from the public policy and public relations committee, will also be included as active members of the committee.

Accident prevention is to be accomplished by using the responsibility of the foreman and supervisor as a basis. Particular attention is to be paid to the physical conditions of employees; physical examinations, mutual benefit plans, hospitalization fees and societies, and accident and health policies are to be investigated as possible methods of improving physical and mental conditions of the men working at hazardous occupations.

Each company submitted a report of its accident prevention program. These reports are similar, the plan varying only in the details by which it is carried out, and the committee will endeavor to obtain a standard accident statistics report which will incorporate uniform practices of reporting all accidents.

Individual safety records were recommended as necessary considerations for selection and promotion of men for larger responsibilities.

A complete report on the accidents for the first eight months of 1931 was presented and showed an increase in fatalities for both electrical and non-electrical accidents, although a decrease of 17 per cent was shown in total accidents. From studies of this report it is hoped that recommendations to prevent accidents of the recurring type can be made.

Activities of the committee included a general mass meeting for members of the entire Engineering Section as well as foremen and supervisors of the district, held Thursday night, Sept. 17. Responsibilities of foremen and supervisors in accident prevention work were outlined by Will J. French, director of the State Department of Public Relations.

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Hydraulic Power Committee

C. B. CARLSON
Southern California Edison Co. Ltd., Chairman

Continued investigation and report on the mechanical reliability of hydro-electric units will be carried out through the coming year, as it was the consensus of opinion that previous results of the committee would be more valuable if this were done. Additional reports of current research will be included in the committee work, as will the report of practice and procedure in hydro developments.

In keeping with the trend of the times, a new committee has been formed to make an economic study of existing hydro-electric plants. Both new developments and existing installations will be investigated for the purpose of uncovering possible operating economies.

This committee has been augmented by the addition of a number of new members, the chairman feeling that new work can be carried out to a better advantage if younger members of the utility are given the opportunity to cooperate in the committee efforts.

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Foreign Systems Coordination Committee

G. H. HAGAR
Pacific Gas and Electric Co., Chairman

Investigation of interference will be carried on in four subcommittees. The work of the inductive coordination subcommittee will be a continued investigation of current interference trouble and the working out of an advanced planning system between the power and communications companies. To this end, it is hoped that future exten-

sions in areas of load growth will be so laid out as to minimize interference.

The subcommittee on power company communication will investigate new developments in the light of the particular requirements of utility communication systems.

A further study of the field strength in relation to the distance from broadcasting stations will be undertaken by the radio coordination subcommittee. Previous results have indicated that a wider distribution of radio broadcasting stations rather than increased wattage of existing broadcasting stations will assist in minimizing radio complaints. New developments and material in utility construction will be given consideration in this light also. It is believed that greater satisfaction to the average radio listener can be obtained by making preventive surveys which would eliminate potential sources of disturbances.

Minutes of the meetings of other foreign systems coordination committees in various parts of the country were read and discussed.

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Electrical Apparatus Committee

L. A. BUESE
Los Angeles Gas and Electric Corp., Chairman

Work of the electrical apparatus committee will consist of economic investigation of current practice. Reasons rather than methods will occupy the major part of the discussion and activities of this committee. In preventive engineering a subcommittee will investigate the interlocking of disconnects, protective grounding and the use of insulated platform conveyors. Effort is being made to evolve a set of general recommendations on these matters.

The subcommittee on protective engineering will investigate major causes of faults and endeavor to suggest system set-ups designed to lessen the severity of faults. The application of high-speed relays in this connection will be investigated.

In line with the general committee's activities, a subcommittee on economic engineering will investigate distribution costs. At the meeting talks on this subject were presented by B. B. Beckett and S. J. Lisberger, of the Pacific Gas and Electric Co. This committee will study the economics of radial or primary network distribution systems, an important factor in this investigation being the voltage regulation from distribution substations.

A subcommittee on new developments will investigate new ideas rather than new apparatus. This committee will act as a clearing house for committee members who express their desire to discuss subjects not at present being considered.

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Meter Reading Committee

E. L. HUGHES
Pacific Gas and Electric Co., Chairman

The attention of the subcommittee on the education of metermen is directed to the report on the results of the last courses given. Discussion was brought out as to the advisability of continuing it or the feasibility of attempting to put on the N.E.L.A. meter courses for instruction in this line.

Operating problems in the meter departments of the various utilities which will bear investigation during the coming year will be the systematization of testing and methods of maintenance which will produce the best operating results. Demand meterings and maintenance, as well as transformer operations will also be studied.

A report was presented to the section on new developments in the art of metering, including new apparatus, new methods and accessories which improve operation.

Reactive kva. metering also came in for discussion, and investigations will be continued as to the best method of testing this class of meters. Neon signs are to be investigated as factors influencing the accuracy of watt-hour meters.

A new committee on outdoor secondary metering as applied to California conditions has been organized to conform with the changes which are expected in the national code. Thefts of current in increasing proportion necessitates investigation of wiring conditions and methods to overcome this loss to the utility.

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Prime Movers Committee

LEO J. KRAPS
Southern California Edison Co. Ltd., Chairman

This year's committee will have a large number of subcommittees each devoted to a definite phase of steam station operation. Reasons and methods of turbine washing were reported upon. The subcommittee on condensers and auxiliaries is investigating the possibilities of standardizing on a system of keeping condenser reports.

Superheater performance was reported upon by the subcommittee on boilers and auxiliaries. The subject of instruments and automatic control will be studied with the idea of obtaining unit costs and detailed maintenance of instruments.

The chemistry of fuel gas analysis was presented by F. C. Jones, of the Pacific Gas and Electric Co. Methods of developing the characteristics of fuel gases from analysis and methods of making such analysis is a subject of extreme importance to Western utilities and received much discussion.

Safety for Animals

ONE of two "deer escapes" built in the Salt Springs-Tiger Creek conduit of the Pacific Gas and Electric Co.'s hydro-electric development on the Mokelumne River. At these two places in the flume an animal has no choice but to get out. The conduit widens from 14 to 19 ft., and a ramp is constructed at one side. Iron bars across the flume not only prevent the animal from going farther but steer him onto the ramp, whence it takes only a few steps to carry him to dry land.

High-pressure piping was reported upon. Methods of installation, including joints, provision for expansion and stresses were taken up and discussed. Heat balance has been investigated with the location of evaporating condensers as a center of discussion. The value of this type of apparatus is being investigated.

R. C. Powell, C. E. Steinbeck, M. C. McKay, W. M. Monroe and V. F. Estcourt, of the Pacific Gas and Electric Co., reported on station "A." Design, construction and operating features of this high-pressure station were included.

Advances in metering and automatic control, as well as developments in steam station apparatus, were discussed in the round table discussion that followed the meeting.

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Overhead Systems Committee

D. V. SMALLEY
Midland Counties Public Service Corp., Chairman

Activities of the overhead systems committee during the coming year will be based on practical field investigation rather than on technical studies. A continuation of the study of distribution transformers in relation to radio interference and loading will be carried out. With reference to the latter, practical operating results are being studied so that recommendations for the selection of the proper size transformers for heating and cooking loads can be accomplished. This activity is to be a major item in the committee work and it is hoped to eliminate the present tendency of over transforming to improve voltage regulation.

Case design will be studied in an effort to standardize hangers so that transformers of different manufacturers can be interchanged on the pole without the attendant change in structure.

Vibration, connectors and splicers will be studied by the subcommittee on line conductors. It is hoped to obtain general recommendations on these two items during the year.

Grounding will be studied in an attempt to classify grounds as to types, circuits and conditions.

The subcommittee on pole line structures will make guying a major activity. Recommendations for more lenient guying rules will be the object of this work. Methods of inspection of wood poles in service will also be given thorough investigation.

A new committee on insulators has been formed to investigate the developments in insulator design during the past five years. Applications of insulators will also be investigated in relation to the type and design relative to the condition of service.

Protective devices in their relation to transformer equipment are being studied. Pole top oil circuit breakers and fuses in their relation to the time element of protection are being considered.

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Underground Systems Committee

J. C. McCLUNG
Los Angeles Gas and Electric Corp., Chairman

Discussion of the pulling stresses of cable through various types of ducts with a study of the latter occupied the first portion of the committee meeting. It is the general opinion that there is a great deal of knowledge to be obtained on this subject and at present a definite course of investigation is being laid out to be followed by the committee during the year.

Corrosion of lead is a particularly important subject in underground departments. An investigation by the committee indicated that corrosion is caused both by chemical and electrolytic action but that the effect of corrosion probably is not the cause of cable failure in the degree that it is popularly assumed. Care in handling of the cable is stressed as the greatest protective factor against cable failure.

A very interesting discussion was brought about by the report on "Developments of a Low-Cost Underground Distribution System." The reduction of capital expenditures in underground distribution may be possible through the development of transformer junction boxes and cutouts which can be buried directly in the ground and a system of feeders which will not require the use of expensive duct construction. Several installations have been made on a small scale and the future promises interesting development along these lines.

The cause and prevention of manhole explosions is another subject closely tied in with the operating and public relations department. Natural gas leakage and apparatus failure were discussed as causes of explosion and methods of prevention were outlined.

The use of high-voltage cable was discussed and a new method of testing such cables with direct current through the use of a kenetron test set was reported upon.

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Women's Committee Meets In San Francisco

No lessening of the women's committee functions was implied in an announcement made last month by its chairman, Miss Clarita Scott, of the Los Angeles Gas and Electric Corp., that the luncheon meeting of the committee held Sept. 2 in San Francisco would be the only general meeting that the committee would hold during the present association year. The conclave was the first since the merger of the P.C.E.A. women's committee with that of the Pacific Coast Gas Assn.

Instead of the usual three gatherings held in different parts of California, to which it is felt it would be hard to draw a representative attendance this year, the committee's meeting ground will be a monthly bulletin issued by the chairman, in which activities of the committee will be discussed.

An innovation in the women's program of public relations work for the year is the suggested preparation of illustrated lectures suitable for presentation before women's clubs and other groups. Two lectures with lantern slides are to be prepared, one telling the story of the development of electricity from its source in the rivers or in steam plants to the turning of a switch in the home, and the other dealing similarly with the gas industry. The talks will be prepared in such a way that they can be localized by insertion of a company's own material at appropriate intervals. It is aimed to have at least one woman in each company in a position to go out and deliver the address whenever called upon.

Public utility economics will be the featured subject of study by the committee this year. Home service and first-aid and safety work will be continued, and attention will be given to the dissemination of pertinent articles appearing in current periodicals.

Northwest Association

Engineering Section Plans Year's Work

Organization of the Engineering Section of the Northwest Electric Light & Power Assn. was completed, and plans for the year's work were outlined at a meeting of the section executive committee in Portland, Sept. 10-11, 1931. E. H. Collins, The Washington Water Power Co., Spokane, chairman of the section, announced the following committee chairmen for the current association year: accident prevention, J. B. Fisken, The Washington Water Power Co., Spokane; code, S. B. Clark, Northwestern Electric Co., Portland; electrical apparatus, J. Hellenthal, Puget Sound Power & Light Co., Seattle; foreign systems coordination, H. H. Schoolfield, Pacific Power & Light Co., Portland; hydraulic power, J. E. Yates, Pacific Power & Light Co., Portland; meter, A. H. Kruel, Portland General Electric Co., Portland; overhead systems, T. A. Purton, Idaho Power Co., Boise; prime movers, C. C. Simeral, Portland General Electric Co., Portland; underground systems, C. H. Hoge, Puget Sound Power & Light Co., Tacoma.

The following are members-at-large of the executive committee: J. C. Boyle, The California Oregon Power Co., Medford; J. B. Brokaw, West Coast Power Co., Portland; H. H. Cochrane, Montana Power Co., Butte; O. B. Coldwell, Pacific Northwest Public Service Co., Portland; V. H. Greisser, The Washington Water Power Co., Spokane; J. A. Hale, Utah Power & Light Co., Salt Lake City; W. S. Hill, Grays Harbor Railway & Light Co., Aberdeen; O. L. LeFever, Northwestern Electric Co., Portland; O. D. Lanning, Eastern Oregon Light & Power Co., Baker; E. F. Pearson, Northwestern Electric Co., Portland; G. E. Quinan, Puget Sound Power & Light Co., Seattle; H. L. Senger, Idaho Power Co., Boise.

Wililam S. Hill, general superintendent, Grays Harbor Railway & Light Co., Aberdeen, Wash., was elected vice-chairman of the section.

It was tentatively decided to hold the annual meeting of the section in Portland in April, 1932.

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Glenn L. Jackson Heads Commercial Section

Appointment of Glenn L. Jackson, sales manager, The California Oregon Power Co. and Mountain States Power Co., Medford, Ore., to be chairman of the Commercial Section of the Northwest Electric Light and Power Assn. for the current association year has been announced by P. M. Parry, Utah Power & Light Co., president. Mr. Jackson's appointment followed the resignation of R. U. Muffley, Puget Sound Power & Light Co., Seattle, from the chairmanship after his promotion from the position of vice-chairman which he held last year. The broadening of Mr. Muffley's responsibilities as commercial manager of the central district of his company in Seattle and the increased work entailed thereby prevented him from undertaking additional outside obligations at the present time.

Organization of the Commercial Section under Mr. Jackson is proceeding rapidly.

N. E. L. A.

Rocky Mountain Division Holds Convention

PUBLIC relations and merchandising problems were the subjects of chief discussion at the three-day convention of the Rocky Mountain Division, National Electric Light Assn., held at the Stanley Hotel, Estes Park, Colo., Sept. 2-4. More delegates from member utility companies in Colorado, Wyoming and New Mexico were registered for this, the organization's most successful convention, than have been present at any similar event in Rocky Mountain Division history.

Practically all the speakers stressed the importance of intelligently directed public relations and publicity activities as an antidote to the attacks of political agitators against the electric utilities.

George F. Oxley, of New York, N.E.L.A. director of publicity, fired the opening gun in this respect when he delivered a message from Paul S. Clapp, who was scheduled to speak but unable to attend the convention. Rev. George Weber, Albuquerque, N. M., declared the present business depression is a definite challenge to utility brains and leadership, which should be potent agencies in restoring public confidence.

Following up this theme, Frank R. Jamison, advertising and publicity director for Public Service Co. of Colo-

WILLIAM W. NIELSEN
. . . president-elect of the Rocky Mountain Division

rado, asserted that customers should not be encouraged, through advertising and news stories, to believe the trend of electric rates will indefinitely continue downward, since "rock bottom" is an early prospect. He suggested that if bills were itemized in terms of service rendered, instead of kilowatt-hours, the public would have a better conception of benefits derived from electricity at negligible cost.

"The Compelling Need for Employee Training," by H. A. Tiemann, state supervisor of trade and industrial education, Colorado Agricultural College, described a vital phase of public contact work.

An allied subject was that of company-dealer relationships. J. F. Owens, of Oklahoma City, Okla., national president, reported that the joint electric merchandising committee has, within the past six months, made such strides that the prospect of anti-utility legislation in several states has faded.

The merchandising squabble, he said, offers to the industry one of the greatest opportunities ever presented to remove misunderstanding of our business. He urged every property to hold conferences immediately with local merchants and put into effect the principles laid down by the joint committee.

"Cooperative Merchandising," by L. W. W. Morrow, editor of the *Electrical World*, pointed out the futility of blaming competition for the failures that result from inefficient management and ineffective merchandising

methods. He took issue with those who contend that electric sales outlets are too numerous, and advocated more and better operated stores as a means to greater sales volume, with greater profits for all concerned.

C. E. Greenwood, New York, commercial director, N.E.L.A., dealt with "Selective Selling Opportunities," pointing out that the field for various electric appliances has scarcely been touched, and can be cultivated by concentrated and cooperative effort on the part of manufacturer and merchandiser.

Of vital interest to delegates was a report by Luke R. Storey, Home Gas and Electric Co., Greeley, Colo., on "What the Pumping and Irrigation Committee Is Doing." Analysis of pump efficiencies has resulted in big savings to customers, he reported, adding materially to the irrigation load. A. H. Heitzler, superintendent of the Electric Department, Public Service Co. of Colorado, who is the new Engineering Section chairman, spoke on "Latest Problems in Utility Operations," stressing the fact that engineering cooperation with management has made possible successful and profitable operation of electric properties.

A feature of the convention program was H. S. Sands' paper, "Who Pays the Taxes in a Taxless Town"? Mr. Sands, a consulting engineer and president of the Denver Chamber of Commerce, analyzed the incomes of towns supported by revenues from municipally owned electric plants. Taxes raised in this manner, he showed, place a heavy burden on those customers least able to pay, and who derive the least benefits.

An outstanding contribution was M. M. Koch's paper on "Reducing Electric Losses." Mr. Koch, superintendent of electric distribution at Public Service Co. of Colorado, advocated the use of charts which discriminate between legitimate and illegitimate losses, with recommendations of methods to eliminate or reduce such leakages and "steals."

Merle Thorpe, editor and manager of *Nation's Business*, speaker at the second day's luncheon, asserted that "government invasion of private business is destroying our political freedom." He cited instances of federal bodies handicapping individual and corporate efforts to remedy their problems, asserting that the United States Constitution is not geared to the paternalistic purposes for which government commissions and bureaus are now being used.

John E. Loiseau, president of the Rocky Mountain Division, N.E.L.A., presided over the first two sessions, being relieved on the final day by Mr. Heitzler while engineering subjects were under discussion. Mr. Loiseau, secretary of the Public Service Co., will continue in office until July 1, 1932 when he will be succeeded by W. W. Nielsen, manager of the New Mexico Power Co. G. B. Buck, Public Service Co. of Colorado commercial manager, was named to serve with Fred Norcross, Home Gas & Electric Co., Greeley, Colo., and J. G. Keegan, Cheyenne (Wyo.) Light, Fuel and Power Co., on the vice-presidential staff. A. C. Cornell and George E. Lewis were elected treasurer and secretary-managing director, respectively. William Trudgian, Westinghouse Electric & Mfg. Co., and B. K. Sweeney, of the B. K. Sweeney Electric Co., Denver, replaced A. L. Jones and E. L. Garihan on the executive committee.

Chairmen of the sections were elected as follows: Accounting, C. C. Baker, Colorado Central Power Co., Golden, Colo.; Commercial, H. L. Pinkerton, Albuquerque (N. M.) Gas & Electric Co.; Engineering, A. H. Heitzler, Public Service Co. of Colorado, Denver; Public Relations, W. D. Johnston, Mountain States Power Co., Casper, Wyo.

A "resumé meeting" at the conclusion of the three-day sessions, brought forth recommendations which will be transmitted to the executive committee. Principal among these suggestions is that the Rocky Mountain Division follow leaders of the industry by "nailing" misrepresentations of utility baiters at their source. Employee training will be vigorously fostered in order that the rank and file shall be better equipped to answer unfair charges against the industry.

Estes Park was tentatively selected as the 1932 meeting place.

Meetings

Coming Events

International Association of Electrical Inspectors, Northwest Section—Sixth annual convention at Salem, Ore., Oct. 5-7, 1931.

National Electric Light Association—Annual convention and exhibit, Atlantic City, N. J., June 6-10, 1932.

National Electrical Wholesalers Association, Pacific Division—Thrice yearly meeting, Hotel Del Monte, Del Monte, Calif., Oct. 8-10, 1931.

Pacific Coast Electrical Assn.—Commercial Section meeting, Los Angeles, Oct. 15-16, 1931.

Engineering Section meeting, Los Angeles, Dec. 9-11, 1931.

Vancouver Electric Club Holds Annual Golf Match

All branches of the electrical industry were represented at the annual golf tournament held recently under the auspices of the Vancouver (B. C.) Electric Club. J. Crosman, Crosman Electric Machinery Co., won the championship with a net score of 68. E. E. Roberts, B. C. Electric Railway Co., Ltd., won the low gross prize with a score of 82.

The following were the winners in "A" and "B" flights: B. DeM. Mertens, B. C. Electric; E. Brettell, Brettell Electrical Distributing Co.; J. Duck, Farr, Robinson & Bird; S. C. Fawcus, B. C. Electric; W. H. Sellars, Northern Electric Co.; M. Montgomery, electrical engineer of Vancouver; S. Anderson, B. C. Electric Railway Co.; and W. Urwin of the B. C. Electric.

Prizes for the golf tournament were donated by G. Kidd of the B. C. Power Corp.; W. G. Murrin, president, B. C. Electric; The Canadian General Electric Co.; Canadian Westinghouse Co.; Northern Electric Co.; Canada Wire & Cable Co.; Packard Electric Co.; Vancouver Electric Club, and the Electrical Service League of B. C., all of Vancouver.

Following the tournament a dinner was served to 46 persons, during the course of which the prizes were distributed.

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ORANGE BELT ELECTRIC CLUB ELECTS OFFICERS—At the regular meeting in San Bernardino, Calif., Sept. 15, of the Orange Belt Electric Club, whose membership is drawn from Riverside, San Bernardino and surrounding southern California towns, the following officers were elected for the year: president, G. A. Goodbub, General Electric Supply Corp.; vice-president, E. P. Snyder, Redlands contractor; secretary, William Fleming, Southern Sierras Power Co. The club is starting its fourth year with 75 members. Two hundred guests are expected at a dinner dance and entertainment to be held Oct. 20 at the California Hotel, San Bernardino. This ladies' night function is in charge of James H. Paige, Paige Electric Co., San Bernardino.

CREATION OF A PUBLIC UTILITIES COMMISSION to handle matters concerning hydro-electric development alleged at present not to be within the powers of the existing provincial water board was the focal point of discussion at the convention of British Columbia municipalities at New Westminster, B. C., recently. Resolutions demanding appointment of a commission were put forward, but when they emerged from the resolutions committee they had been altered to recommend that the water board be given the regulatory authority. This resolution was objected to and was referred back to the committee in order to hear evidence of affected municipalities.

SEATTLE SECTION, A.I.E.E., HOLDS BANQUET—The Seattle section of the A.I.E.E. held its annual banquet at the Washington Athletic Club Sept. 15 with 100 members from Washington and British Columbia in attendance. Magnus T. Crawford, Seattle section chairman, presided. The principal speaker was Frank J. McLaughlin, president of the Puget Sound Power & Light Co., who discussed "The Engineer and the Community."

Personals

A. V. Guillou Joins Wisconsin Commission

A. V. GUILLOU, for the past four and a half years assistant chief engineer for the California Railroad Commission, has resigned to become chief engineer of the newly reorganized Public Service Commission of Wisconsin.

Prior to his connection with the California commission, Mr. Guillou was associated with a number of California power companies. After his graduation from the University of California with the class of 1912, he spent two years with the Westinghouse Electric & Mfg. Co. in East Pittsburgh and then joined the Pacific Light & Power Corp., later merged with the Southern California Edison Co., as commercial salesman. Later he became district manager for the Mt. Whitney Power & Electric Co. When that company was taken over by the Edison company in 1919, Mr. Guillou joined its engineering department but left in April of 1920 to become affiliated with the California Railroad Commission as assistant engineer. Three years later he was appointed gas and electrical engineer, and after four years was made assistant chief engineer. During four and a half years in the latter position he has had an active part in a number of condemnation cases coming before the Railroad Commission.

Mr. Guillou carries with him the hearty good wishes of his many friends and acquaintances in California for his success in his new position.

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E. R. Davis Advanced By Edison Company

E. R. DAVIS, manager of construction of the Southern California Edison Co. Ltd. since 1921, has been appointed manager of construction and engineering for the company. Announcement of the appointment was made by R. H. Ballard, president of the company. Mr. Davis now has executive supervision and direction of both the engineering and construction departments.

Coincident with the announcement of Mr. Davis' appointment, Mr. Ballard announced the creation of an engineering executive committee, consisting of Fred B. Lewis, vice-president and assistant general manager; H. A. Barre, chief engineer; and Mr. Davis.

Mr. Davis has been associated with the Southern California Edison Co. Ltd. and its predecessor companies since 1896. In 1911 he became general manager of the Pacific Light and Power Corp., continuing in that capacity until 1917 when the corporation was merged with the Southern California Edison Co. Mr. Davis was appointed superintendent of the northern division of the Edison company at the time of the merger and became manager of construction four years later. As manager of construction, Mr. Davis was an outstanding figure during the development of the Edison company's Big Creek-San Joaquin River hydro-electric project in the Sierra Nevada Mountains of central California.

A. V. GUILLOU

E. F. WATKINS

E. R. DAVIS

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Edison Co. Purchasing Agent Advanced

ANNOUNCEMENT of the appointment of E. F. Watkins as manager of purchases and stores, Southern California Edison Co. Ltd., was made at Los Angeles Sept. 18 by R. H. Ballard, president. The title of purchasing agent, formerly held by Mr. Watkins, has been abolished. Mr. Watkins for a number of years has been head of the Edison company's purchasing department and in his new position the scope of his work will be broadened. He is a member of the Purchasing Agent's Association of Los Angeles and last year was president of the Los Angeles Electric Club.

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CARL E. HEISE, of San Francisco, assistant to the vice-president of the Westinghouse Electric & Mfg. Co., left that city Sept. 23 for New York for the purpose of returning as a special guest on the maiden voyage of the new Westinghouse-equipped Dollar liner, *President Coolidge*. The vessel will leave New York Oct. 15 and arrive in San Francisco Nov. 2.

C. T. BATEMAN, formerly assistant sales manager of the Northeastern District of the Puget Sound Power & Light Co., Everett, Wash., has been made assistant to S. P. MacFadden, vice-president in charge of sales, with headquarters in Seattle.

H. N. KALB, formerly communication engineer for the San Joaquin Light & Power Corp., Fresno, has joined the electrical operating and maintenance department of the Pacific Gas and Electric Co. in San Francisco.

Obituary

ROBERT STEWART CAMPBELL, a prominent figure in the electrical industry 30 years ago in Salt Lake City, died at his home there Sept. 5 at the age of 76 years. In 1873 he joined the Utah Northern Railway, at Logan, Utah, and later he became manager of the Utah Light & Power Co., with supervision also over the street railway system in Salt Lake City. This company was one of the predecessors of the present Utah Power & Light Co.

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CAPTAIN RALPH H. OBER, member of the firm of engineers, Jacobs & Ober of Seattle, Wash., died at his home on Aug. 30, at the age of 60 years. Captain Ober was one of the designers of the Aurora Ave. Bridge, nearing completion in Seattle, and for 40 years had been connected with city and public works projects, both in the employ of the federal government and in private practice.

JOHN H. HUNT, since Feb. 1, 1904, purchasing agent for the Pacific Gas and Electric Co., San Francisco, and its predecessor companies, died of heart failure Sept. 13 while swimming in Bolinas Bay, near San Francisco. Mr. Hunt was 63 years of age.

WILLIAM HENRY WATTIS, president of the Six Companies, Inc., which holds the contract for the construction of Hoover Dam, died in San Francisco Sept. 13 after a long illness. Mr. Wattis was also president of the Utah Construction Co., one of the companies comprising the Six Companies, Inc.

WARREN OLIVER, proprietor of the Oliver Electric Co., Spokane, died in that city Aug. 5 following an illness of several weeks. Mr. Oliver was one of the first electrical contractors and dealers in Spokane, having gone into that business in 1895 when electricity was first coming to the fore. His widow and two sons, Warren, Jr., and Ralph Oliver, will carry on the business.

Contractor Dealer Inspector

Sievers Nominated to National Committee

Northern Chapter, California Electragists, Discuss Price Data Service, Franchise Dealer Plan and Fair Trade Practice Rules

One of the original organizers of the Motor Section, National Motor Section chairman at one time, Frank Sievers, partner in the firm of Kuchel-Sievers Electric Co., San Francisco, was nominated by the Northern Chapter, California Electragists, to become national executive committeeman from California, at the special Northern Chapter one-day convention in Oakland, Sept. 24. He was selected to take the place of Clyde L. Chamblin, for many years holder of that office and at one time national president of the A.E.I., who wishes to retire from the position. Mr. Sievers will attend the national convention at Hot Springs, Ark., as California delegate and executive committee representative. He will also represent the two California Motor Sections.

Two important topics came up for discussion at the Oakland meeting. The first was a consideration of proposed changes in the Pacific Coast Sales and Data Book, a suggested resale price book maintained by the A. E. Rowe Co., San Francisco. The matter was brought to a head by a recent resolution submitted to members for approval, asking the wholesale electric supply houses to withdraw their price sheets from circulation. Many wholesalers have already withdrawn such price sheet service, others have announced their intention to do so. To replace this service an adequate price service has been found necessary, one which would not only give suggested resale prices but from which by simple calculation the contractor's costs could be obtained for his own estimating procedure. Standard markup from costs of certain standard quantities were recommended and discussion centered upon many of the details of the plan. Finally a motion carried appointing a committee to continue the negotiations for changes suggested by the members in subsequent issues of price changes.

A second topic of absorbing interest was a proposal that a plan be drawn up by a committee to be submitted to wholesalers and manufacturers for the franchising of contractor-dealers for wiring supplies in a manner similar to the practice used in distribution of radio, refrigerators and motors. It was brought out that there were evidences that some of the manufacturers were seriously considering such a move, were even canvassing the field for the desirable dealer outlets. The point made was that Electragists must prepare to take advantage of such a plan, must see that the proper qualifications are set up for establishing franchised outlets, must provide safeguards to the identity and future welfare of dealers under the franchise provisions, and once established, must see that the franchises mean what they intend, by proper penalties for violations.

A committee was appointed to draw up a recommended franchise procedure to be submitted to wholesalers and manufacturers and with them to arrive at some satisfactory plan to report upon at the next meeting of the chapter, early in December.

These two topics and the election of Frank Sievers occupied the entire afternoon session. Presided over by Edward Martin, president of the chapter, the meeting, attended by 36 contractors from all sections of northern California, opened at 3 p.m., adjourned to dinner at 6:30, and ended in a final short session after dinner at 9:30 p.m. The Oakland and San Francisco contractors acted as hosts at the dinner.

After the dinner talks were made by Frank Kiefer, northern region manager, Pacific Coast Electrical Bureau, and W. A. Cyr, associate editor, ELECTRICAL WEST, acting secretary of the chapter.

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M. J. WALSH ELECTRIC COMPANY, Portland, has moved from 116 Fourth St. to larger quarters at 149 Twelfth St. The main floor, 50 x 200 ft., is used principally for display and as a sales room for fixtures and appliances, while a 50 x 100-ft. basement houses the storeroom and wiring department. A new shop for manufacturing fixtures is located at Fourteenth and Couch Sts. Officers of the business, founded in 1892 by M. J. Walsh, who died four years ago, are: president, Mrs. M. J. Walsh; vice-president, A. C. Walsh; treasurer, Frank M. J. Walsh; secretary, J. C. Galarneau.

HARPER BROS., electrical contractors, located for the past three years at 3626 Tweedy Blvd., South Gate, Calif., have moved into a new store location at 3516 Tweedy Blvd. and, in addition to electric supplies, now have added a radio department.

IRON CITY ELECTRIC CO., Pueblo, Colo., will soon move to a new location at 114 West Seventh St., in that city.

GROVER C. BURKE and R. T. EVANS, who have been associated in the City Electric & Fixture Co., 216 James St., Seattle, for the past eleven years, have dissolved partnership, with Burke remaining at the James St. location, retaining the old firm name. R. T. Evans is going into business for himself, specializing in electrical contracting at 1248 Sixth Ave. South. The City Electric Co. will continue as contractor-dealers.

Inspectors Meet in San Francisco

San Francisco was host to the Southwestern Section, International Association of Electrical Inspectors, eighth annual meeting on Sept. 28-30. Full reports of the business of the convention will be published in the next issue of ELECTRICAL WEST.

Meeting on the first morning, the delegates heard R. H. Manahan, I.A.E.I. president; Ralph Wiley, Section president; H. W. Beecher, executive committee; and C. W. Mitchell, secretary-treasurer of the Section, deliver annual reports. The afternoon program included talks by R. Roy Cowles on "Four-wire A. C. Secondary Network"; A. L. Abbott, "The Industry Adequate Wiring Problem"; and Mr. Manahan in a discussion of inspectors' problems.

Speakers on Tuesday morning were B. C. Hill, A. Penn Denton, O. B. Blackwell and G. E. Kimball. Between sessions, the convention made a tour of Pacific Gas and Electric Co.'s steam station "A." E. M. McLaughlin and Victor Tousley spoke in the afternoon.

On Wednesday morning W. S. Boyd, T. J. Maher, Wm. A. Cyr, and National President Manahan gave addresses. The afternoon session was given to unfinished and new business, committee reports and elections.

Entertainment provided for the ladies included a sightseeing trip on Monday and a bridge party on Tuesday. A dinner dance was held at the Hotel Whitcomb on Tuesday evening.

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Northwest Inspectors Convene in Salem

At the time of going to press with this issue of ELECTRICAL WEST, the Northwestern Section of the International Association of Electrical Inspectors is about to hold its sixth annual convention at Salem, Ore. Dates are Oct. 5-7, 1931.

The greater portion of the program is taken up with reports of the various standing committees on the different articles of the code, though a number of allied subjects will be discussed by authorities outside the association territory. Among the outside speakers are Arthur L. Abbott, N.E.M.A., New York, on "Adequate Wiring"; L. W. Whitton, Otis Elevator Co., San Francisco, on "The History of the Elevator"; V. H. Tousley, National Fire Protection Assn., Chicago, on "The 1931 Code"; and Victor Hartley, Pacific Coast Electrical Bureau, San Francisco, on Red Seal and other promotional activities.

Golf and a banquet are on the entertainment program as are also special events for the ladies. The flax and linen industry centering at Salem will be inspected by the delegates. A display of manufacturers' exhibits is again a feature of the convention. E. C. Bushnell heads the general convention committee.

Above—Mesdames Goode, Frand Connolly and Eulalia Brandhuber, pillow-and-case relay winners. Left—Frank Connolly, executive secretary, California Electragists, southern branch, was ringmaster and ringleader of the picnickers. Right—R. H. Manahan, A.E.I. president, umpired and arbitrated Below—Winners of the baseball pennant, a contractor's team composed chiefly of estimators

In an inner-tube race between the four branches of the industry, the central station team was victorious; the jobbers easily won an indoor baseball relay. For the women, a pillow stripping contest was included. In this, a team member was given a pillow and slip; she was required to case and uncase the pillow and then hand it to a teammate who did likewise. This event was won by a team composed of Mesdames Goode, Frank Connolly, and Eulalia Brandhuber. Mrs. Brandhuber represented the household division of the Waters-Genter Co.

There were also a number of relay races of various types for the boys and birls from the group. A special playground supervisor took care of the small children.

Following the games, a barbecue dinner was served.

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J. T. DRYBROUGH, formerly a traveling salesman for the wholesale electrical, hardware and radio firm of McLennan, McFeely & Prior Ltd., Vancouver and Victoria, B. C., has been appointed manager of the company's New Westminster branch. Mr. Drybrough has been associated with the organization for more than 20 years.

More Than 400 Attend Electragist Picnic

More than 400 persons, representing central stations, manufacturers, jobbers and contractors, attended a picnic sponsored by the California Electragists, southern branch, for the electrical industry of southern California on Saturday afternoon, Sept. 19. An entire section of Brookside Park, Pasadena, was reserved for the event.

Those who attended were really representative of the industry. Among Southern California Edison Co. officials were W. L. Frost, vice-president in charge of sales; H. C. Rice, manager merchandising department; R. G. ("Spike") Kenyon; and most of the company's district managers. Among the manufacturers and jobbers were Sam Gates, General Electric Co.; Harry Harper, Graybar Co.; "Dick" Russell, Associated Wholesale Electric Co.; and "Dave" Pence, Westinghouse Electric Supply Co. Glenn Arbogast and Art Rowley, president and vice-president of the sponsoring organization, were among the Electragists present.

Starting the afternoon of sports under the guidance of Ringmaster Frank Connolly, executive secretary, California Electragists, southern branch, a baseball game was played between teams of contractors and manufacturers-jobbers. Simultaneously, on another diamond, another contractors' team was battling a picked utility aggregation. The contractors won from the manufacturers-jobbers but lost to the utility group. A play-off for the championship, which the contractors won, followed the other events. As an added feature, Los Angeles Gas and Electric Corp. sent its baseball team to play against a picked nine from the others.

Central station men compose this team which was runner-up

They even look like jobbers and manufacturers, do the men in this aggregation

Another contractors' baseball team

Not to be outdone, the boys also entered races and relays

Manufacturer Distributor

Bennett Co. Leases San Francisco Building

The L. H. Bennett Co., Ltd., distributor of General Electric refrigerators in northern California and western Nevada, with headquarters in San Francisco, has leased a five-story building at the southwest corner of Sutter and Stockton Sts., in that city, and will convert it into a modern display room and office building. The main floor of the building will be given over to a display of the complete line of General Electric refrigerators; the upper floors will be occupied by the company's general offices and meeting rooms. Remodeling of the building is to be started immediately and it is expected to be ready for occupancy about Dec. 1 of this year.

Since 1927, when the Bennett company started in business, it has built up a sales organization of ten branch stores in San Francisco, Oakland, Berkeley, Sacramento, Stockton, San Jose, Palo Alto and Burlingame, and has a sales personnel of about 125 men. In the smaller towns and communities the company has more than 100 dealers. Officials of the company report a substantial increase in business over that of 1930.

E. L. Hawley Takes Over Conlon Sales

E. L. Hawley Co., 149 California St., San Francisco, has been appointed northern California representative of the Conlon Corp., of Cicero, Ill., manufacturers of washing machines and cabinet automatic ironers.

E. L. Hawley is well known as an electrical manufacturers' representative in this terirtory. He pioneered and for several years handled sales of the Apex Electrical Mfg. Co.'s appliances on the Pacific Coast.

E. L. HAWLEY

Other Western representatives of the Conlon Corp. are: Pacific Northwest, Lee Cox, Seattle; Intermountain, John A. Miller, Denver.

Four models of cabinet automatic ironers are now being actively merchandised by Conlon in this territory, ranging in price from $119.50 to $169.50. Two models of washing machines, No. 142 retailing in the West at $69.50, and the *de luxe* model No. 131, retailing at $109.50, are also being featured.

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Curtis Lighting Shifts Los Angeles Personnel

"Jess" Lauderdale, who has been temporarily operating the Los Angeles territory for Curtis Lighting, Inc., since January, 1930, is returning to the general office in Chicago to resume his duties of sales manager.

W. K. ("Bill") Turner, for several years in the Seattle territory, and T. A. ("Tom") Esling, from the Detroit territory, both experienced sales engineers of the Curtis organization, have been appointed to handle the Los Angeles territory covering southern California and Arizona.

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PAUL R. PRIETSCH, for the past two years general manager of Gordon Prentice, Inc., Seattle, western Washington distributor of General Electric refrigerators, has been appointed northern California manager for O'Keefe & Merritt Co., of Los Angeles, manufacturers of gas ranges and electric refrigerators. Mr. Prietsch's headquarters will be in the Furniture Exchange, 180 New Montgomery St., San Francisco. Prior to joining Gordon Prentice, Inc., Mr. Prietsch had for several years been manager of the miniature lamp department of the Westinghouse Lamp Co. in San Francisco.

TERRITORIAL VICE-PRESIDENT, JOHNS-MANVILLE SALES CORP.—At a recent meeting of the board of directors of the Johns-Manville Sales Corp., New York, Franklin Shuey was elected a vice-president to have executive supervision of the territorial district comprising San Francisco, Los Angeles and Seattle. Managers of the company's offices in the three cities named are as follows: San Francisco, E. H. Clausen; Los Angeles, H. B. Heyn; Seattle, F. W. McDermott.

NORMAN L. BOST, for the past six years Northwest representative of the Diamond Electrical Mfg. Co., with headquarters in Seattle, resigned recently to become manager of the Northwest branch of the National Electric Products Corp., of Pittsburgh, Pa. Mr. Bost has opened offices at 809 Terminal Sales Bldg., Seattle. The firm's Pacific Coast head office is in San Francisco. H. J. Newton is Pacific Coast manager.

THOMPSON & HOLMES, INC., San Fancisco, and Ungar & Watson, Inc., Los Angeles, have recently been named distributors in their respective cities of ABC washers, ironers and "electrotables" made by Altorfer Bros. Co., Peoria, Ill.

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Westinghouse Puts On Show in Los Angeles

THE Ambassador Hotel, Los Angeles, on Sept. 3-4 was the scene of this display of Westinghouse appliances, attended by 1,200 visitors, mostly dealers. The new Westinghouse washer made its first public appearance in the West at the show, with four models displayed, completing the company's line of appliances, which was represented by at least one model of each.

John Clark, sales promotional manager of the merchandise department of the Los Angeles office, Westinghouse Electrical & Mfg. Co., and John A. Duncan, of the Westinghouse Supply Co., Los Angeles, put on the show.

Meyers Safety Switch Company Reorganized

Incorporation of the former Meyers Safety Switch Co., San Francisco, manufacturers of safety switches, switchboards, and panel boards, as the Meyers Safety Switch Co., Inc., was announced last month. Officers of the firm are: president, Conrad J. Grieder; vice-presidents, Albert M. Rovegno and S. A. Meyers; secretary-treasurer, E. Earl Browne; and sales manager, R. L. ("Doc") Cameron.

The present corporation is an outgrowth of the partnership operated for the past ten years by Messrs. Meyers, Rovegno and Grieder. Mr. Browne, the new member of the firm, has long been identified with the electrical contractor-dealers in San Francisco, and for sev-

A new Meyers safety switch "can" now adorns the front of the building of the newly organized Meyers Safety Switch Co., Inc., at 419 Tehama St., San Francisco. The group of gentlemen standing below it are four of the company's officers: Earl Browne, "Connie" Grieder, "Doc" Cameron and Al Rovegno

eral years served as manager of the San Francisco Contractors and Dealers Assn., now the San Francisco Electragists. In 1919 he organized the firm of Browne-Langlais which operated in San Francisco as electrical contractors for a number of years.

The Meyers safety switch was first manufactured by the Meyers Electrical Mfg. Co., forerunner of the Meyers Safety Switch Co., in 1916. In that year Governor Johnson of California established the Industrial Accident Commission. The electrical division of the commission set up a statewide improved standard for electrical installations, which included a requirement for the enclosing of switches. The Meyers externally operated switch was one of the first to be manufactured on the Pacific Coast for the general trade.

NORTHWEST FRIGIDAIRE DEALERS MEET—Frigidaire dealers from Oregon and southern Washington met at the Multnomah Hotel, Portland, Sept. 1, in a fall sales convention. H. C. Jamerson, general sales manager, Dayton, Ohio, presided over the meetings. J. L. Conover, Pacific regional director, and G. W. Shane, promotion manager, accompanied Mr. Jamerson. Motion pictures were run showing the development of electrical refrigeration and the modern Frigidaire plant.

APPLETON ELECTRIC CO., Chicago, has discontinued its Seattle office and warehouse. The company's Northwest territory is now in charge of A. W. Rockwell, district manager, whose headquarters are in San Francisco. F. D. Good, formerly of the Seattle office, will continue to travel in the Northwest for the company, but all shipments to that territory will hereafter be made from the San Francisco warehouse.

NORTHERN CALIFORNIA DISTRIBUTOR NAMED FOR L. & H. RANGES—Thompson & Holmes, Ltd., San Francisco, Majestic refrigerator and radio distributors, have been appointed northern California distributors of L. & H. ranges, manufactured by A. J. Lindemann & Hoverson Co., Milwaukee, Wis. P. F. Ross, 715 Bryant St., San Francisco, is Western Division manager for the range manufacturer.

UTAH DISTRIBUTOR OF STANDARD RANGES—Zion Cooperative Mercantile Institute, Salt Lake City, has been appointed Utah distributor by The Standard Electric Stove Co., Toledo, Ohio. A full stock of Standard ranges will be carried by the Zion organization, which will supply all dealers in the state.

FREDERICK S. MILLS, I.E., Commercial Exchange Bldg., Los Angeles, announces that he is now representing the following manufacturers: Overbagh & Ayres Mfg. Co., Inland Glass Works, Inc., and Spertus, Inc., all of Chicago, and Lumi-Letter Co., of New York.

WORTHINGTON PUMP AND MACHINERY CORP., Harrison, N. J., has acquired the manufacturing and marketing facilities of Metalweld, Inc., Philadelphia, builders of a complete line of portable compresser units. The portable compressors will be manufactured at Worthington's Harrison, N. J., works.

E. P. BECKER has succeeded R. W. Gorham as Pacific Coast manager of Altorfer Bros. Co. Mr. Becker's headquarters are in the Chamber of Commerce Bldg., Los Angeles. He has been selling A.B.C. washers for a number of years. Mr. Gorham has returned to the company's factory at Peoria, Ill.

H. H. ("HANK") MANNY, Northwest manager of Maydwell & Hartzell, Inc., made a hurried trip to San Francisco last month for the purpose of conferring with members of his company in that city.

1932 Hotpoint Range Makes Its Bow

The "Hotpoint Hostess," the new General Electric Hotpoint Model RA69 automatic range, was introduced to 600 dealers and utility commercial department representatives during September in a series of six meetings conducted in Spokane, Seattle, Tacoma, Portland,

The cream and cascade green color combination of the advanced 1932 model "Hotpoint Hostess" will blend harmoniously with most modern kitchen color schemes, but there is a choice of white and silver gray finish for those who prefer. A warming compartment, utility drawer and two appliance outlets are new features

San Francisco and Los Angeles under the auspices of the Edison General Electric Appliance Co. and the General Electric Supply Corp.

Typical of the meetings held was that in San Francisco where F. C. Todt, district manager of the General Electric Supply Corp., spoke on "The Initials of a Friend." R. E. Fisher, vice-president in charge of public relations and sales, and H. C. Carroll, manager of electric sales, Pacific Gas and Electric Co., and D. E. Harris, vice-president, General Electric Supply Corp., were speakers. R. J. Cordiner, Pacific Coast manager of the Edison General Electric Appliance Co., was chairman of the meeting.

Features of the range and this year's Christmas campaign plans for it were described by F. H. McCormick, chief engineer of the range division, and Clinton Brown, manager of the campaign department of the appliance company, both of Chicago.

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THE WHEELER REFLECTOR CO., of Boston, Mass., announces the recent opening of a new subsidiary plant at 44 York St., Toronto, Canada, known as the Wheeler Reflector Co. of Canada, Ltd. This factory will manufacture the complete line of Wheeler lighting fixtures for sale in Canada.

New Products

ELECTRIC clocks, mixers and beaters—and of course, the latest in table cooking appliances—are predicted to be the favorites for the Holiday season this year. Ironers will be given preference by many of the more practical-minded. Among the new appliances displayed on this and the pages following, jobbers and dealers will find several that should be included in their Christmas merchandise stocks.

Combination Food Mixer and Juice Extractor

A feature of a new combination food mixer and juice extractor brought out by the Hamilton Beach Mfg. Co., Racine, Wis., is a ball thrust bearing for the juice extractor which keeps the extractor attachment permanently quiet. The ball thrust takes all downward pressure and leaves the full power of the motor to drive the extractor reamer.

The large extractor bowl of green opaque glass may be lifted off free from all metal parts and washed like a china dish. The bowl is 7 in. in diameter and 3 in. deep; it extracts the juice from oranges, lemons, limes and even large grapefruit without juice squirting on the operator.

Any dish, bowl or pan can be used on the stand with the chromium plated mixer, or the mixer can be taken from the stand and used for mashing potatoes in the kettle, mixing icing or Hollandaise sauce while it is cooking, and other jobs where a portable mixer is the more convenient. Intended retail price in the West is $21.95.—ELECTRICAL WEST, Oct. 1, 1931.

Electric Alarm Clock

The Telalarm, a self-starting illuminated electric alarm clock retailing at $9.95, has just been announced by the Warren Telechron Co., Ashland, Mass.

This new self-starting synchronous timekeeper measures 5 in. high by 4¼ in. wide and 3 in. deep. It has a case of modern design made of Dura-silver alloy with a molded black bakelite base. The "butler-wiped" finish of the metal case will not tarnish and reflects the color scheme of any room in which it is placed.

The dial of the Telalarm is illuminated by means of a small Mazda lamp shining through a diffusing glass. By means of a rheostat the light can be shut off entirely, made so dim that the numerals are barely visable, or increased until it is bright enough to read by. The dial is of silver-colored metal. The alarm movement operates a bell which rings for 20 min. unless shut off. It is equipped with an 8-ft. silver gray color, permanently attached.—ELECTRICAL WEST, Oct. 1, 1931.

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Banjo Electric Clocks

Banjo electric clocks have been added to the Sunbeam Eternatime line of the Chicago Flexible Shaft Co., Chicago. They are made of genuine mahogany and black walnut, with panel overlays of Oriental walnut and aspen and the lyre-shaped grille of black walnut. Two sizes of this model are announced: Mount Vernon, 29 x 8 in. with 5-in. silvered dial, at $35; Monticello, 20½ x 6 in. with 3½- in. silvered dial, at $27.50.—ELECTRICAL WEST, Oct. 1, 1931.

Mixer, Beater and Juicer

A useful kitchen aid is the Universal mixer, beater and juicer of Landers, Frary & Clark, New Britain, Conn. Removable chromium plated beaters take care of batters of all kinds, eggs, cream, meringues, souffles and beverages. A chopping attachment cuts up hard-cooked eggs, pimientoes, nut meats, etc., and with another potatoes, squash, turnips and other vegetables may be mashed. The device is also equipped with an aluminum fruit hopper and juice extractor core for extracting the juice from citrus fruits.—Retail price complete, $19.50.—ELECTRICAL WEST, Oct. 1, 1931.

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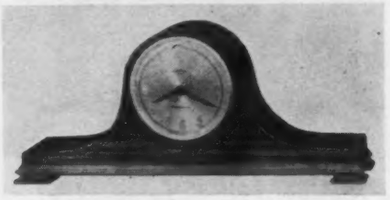
Electric Chime Clock

A low-priced electric chime clock has just been announced by the Revere Clock Co. of Cincinnati. This "Loyal" mahogany tambour, Telechron-motored, retails at $22.75 with hour and half-hour strike and at $29.75 with Westminster chimes.

The "Loyal" is of Colonial design 7⅞ in. high, 18⅛ in. wide and 4½ in. deep. The case is of lacquer-finish Honduras mahogany. Beneath the silvered dial is a small carving which accentuates the simple sweeping lines of the tambour.—ELECTRICAL WEST, Oct. 1, 1931.



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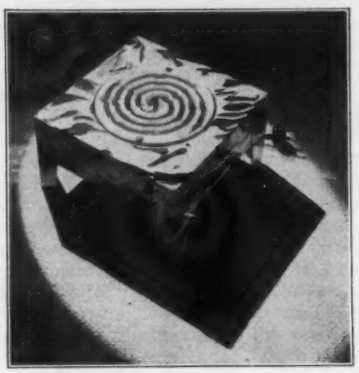
Marbleized Hotplate

A new hotplate, finished in assorted colors in marbleized porcelain enamel, has been introduced by The Standard Electric Stove Co., Toledo, Ohio. This No. 21 hotplate is 8¼ x 8¼ x 4¾ in. in size and has an 880-watt, single-heat unit.—ELECTRICAL WEST, Oct. 1, 1931.



Automatic Waffle Iron

Light, medium and dark brown waffles as desired are delivered by the new "Universal" adjustable automatic waffle iron of Landers, Frary & Clark, New Britain, Conn. In this new iron, baking heat is automatically regulated and timed by adjustable thermostatic control.

The timing lever is adjusted to "light," "medium" or "dark." As the waffle iron preheats a red signal light shines through the perforations in the base. When the proper baking temperature is reached, the red light signals the fact by going out. The heat of grids is then automatically maintained at the correct baking temperature until the batter is poured.

If there is delay in removing waffle or pouring batter, the red light further signals by alternately flashing on and off until batter is poured.

The iron is finished in chromium, with Ivory casein handles, knobs and feet. Diameter of grids is 7½ in.; tray, 9¼ in. Wattage, 660. Intended retail price, $14.50. —ELECTRICAL WEST, Oct. 1, 1931.

Sentinel Washer

A new low-priced washer has been announced by the Automatic Washer Co., Newton, Iowa. The new washer is described by the manufacturer as a quality machine, having such outstanding features as porcelain tub of standard capacity, in mottled gray finish, with heavy gage galvaneal lid; sturdy, reversible swinging wringer with 2-in. balloon rolls; rubber-mounted motor; submerged agitator which will wash a few pieces or a tubful; modern and quiet worm gear and segment drive running in oil, with segment and pinion of laminated steel parts; one-piece reinforced steel base of 16-gage steel and symmetrical legs of the same material. Finish of the machine is gray, harmonizing with the gray mottled finish of the porcelain tub.—ELECTRICAL WEST, Oct. 1, 1931.

Egg Service Set

A new egg service set to retail for $7.50 has just been announced by the Hankscraft Co., Madison, Wis., for Christmas sales. Another selling appeal added this season to the Hankscraft automatic electric egg cooker is the inclusion of a poaching dish. The dish, which fits into the cooker, makes it easy to scramble or poach eggs right at the table. The dome of the new egg cooker is chromium plated—ELECTRICAL WEST, Oct. 1, 1931.

Wuelker "Sunlite" Unit

Designed so as to include the transformer, the Wuelker "Sunlite," latest addition to the line of reflector lamps of the Wuelker Reflector-Lighting Corp., San Francisco, can be used to provide both illumination and ultra violet rays for the promotion of health. Inside finish of the reflector is the company's patented "Diffusion." A new exterior finish, known as "Wuelker Marquetry," is used for the outside, and may be obtained in all colors as well as Etruscan gold. General Electric S-1 sun lamp is used.—ELECTICAL WEST, Oct. 1, 1931.

Airmaster Kitchen Fan

Especially designed to rid the kitchen of obnoxious odors and fumes, the new Airmaster fan, made by Airmaster Corp., Chicago, has a patented propeller of individual shape. This allows a smaller motor and smaller propeller to be used, reducing vibration and noise to a minimum. Finished in gray baked enamel with highly polished mountings. — ELECTRICAL WEST, Oct. 1, 1931.

Small All-Purpose Cleaner

A miniature electric cleaner that gives complete cleaning service in the apartment or small home is announced by the Wise-McClung Corp., New Philadelphia, Ohio. Two sections of swivel-jointed tubing and a special floor tool make it possible for the Sunshine Junior Sanitary Cleaning System to be used to clean floor coverings. This tubing makes it possible also for the operator to clean underneath all furniture, davenports, beds and other heavy pieces with 2½-in. clearance. A special nozzle attached directly to the free end of the hose is used for cleaning upholstered furniture, mattresses, automobile cushions, etc. Cloth or throw-away bags are supplied. Intended Eastern retail price of the complete system is $29.75.—ELECTRICAL WEST, Oct. 1, 1931.

Portable Humidifier

A portable electric humidifier that operates on a principle of forced evaporation from a restricted heating surface is announced by Lewis Air Conditioners, Inc., Minneapolis. The evaporating unit is in the form of a float which rides on the surface of the water in the oxidized copper urn. Intense heat applied to a restricted surface of water forces a high rate of evaporation. When the water supply is exhausted the heating unit automatically shuts itself off. The normal operating time is nine or ten hours without refilling. A Chromalox heating element of 300-watt capacity, 115 volts is used, and may be operated on either d.c. or a.c.

The Lewis humidifier is intended for use in homes, apartments, offices, sick rooms and hospitals. Volatile oils may be placed in the floating element and evaporated into the air for clearing nasal and throat congestion. Flower or pine essences may also be used. Priced to retail at $16.50.—ELECTRICAL WEST, Oct. 1, 1931.

Modern Electric Range

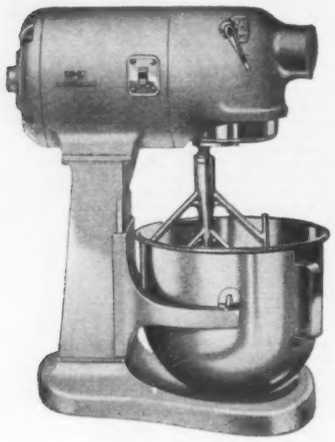
"Modernique," the latest Monarch electric range model of the Malleable Iron Range Co., Beaver Dam, Wis., is a practical combination cooking device and work table. Two tones of green are used for the finish of this console type range, and it has a marbleized enamel top. The left panel conceals the switch panel and a utility drawer; it drops forward and slides in below the drawer when the range is in use. The oven, at right, has rock wool insulation and oven temperature control; its dimension is 15 x 13 x 17¼ in., and it has a 1,350-watt unit for baking and a 1,500-watt unit for broiling. The cooking top of the range has three units, one 1,500-watt, one 1,250, and the third a 1,000-watt unit. A double appliance outlet is placed at the back of the working top.—ELECTRICAL WEST, Oct. 1, 1931.

Food Preparer

The D. M. C. modern food preparer recently placed on the market by the D. M. C. Sales Division of Doughnut Machine Corp., 725 Widener Bldg., Philadelphia, combines all the usual features of food preparing devices and in addition introduces a number of innovations.

Twenty-one attachments are made for use with this versatile appliance, among them being a device for shelling peas, an ice cream freezer, a can opener, coffee and cereal grinder, food chopper, and ice chipping plate. There are, of course, beaters and mixers, a juice extractor, oil dropper and vegetable slicers and shredders. Plenty of reserve power and quiet operation are insured by the three-speed G. E. oversize motor.

A handsome cabinet that will accommodate all of the D. M. C. attachments except the freezer measures 24 x 24 in. by 33 in. high, and is finished in white vitreous enamel. Retail price, with 5-qt. bowl, wire whip and flat beater, $97.50. Prices of other attachments range from $1 to $12.50 each.—ELECTRICAL WEST, Oct. 1, 1931.



Utility Sunlamp

The Miller Co., Meriden, Conn., has now applied its "Udezine" principle of construction to a sunlight lamp, so that five different types of lamps can be made from one piece of equipment. A wall bracket, a table lamp, a low floor lamp, a usual height floor lamp and a floor lamp of ceiling height may all be made by varying the manner of putting the pieces of apparatus together.

This Utility Sunlite is designed for use with the S-2 G.E. sunlamp and may be used as a reading lamp while at the same time providing the benefits of ultra-violet radiation. It is available in a choice of polished nickel and dainty ivory finish.—ELECTRICAL WEST, Oct. 1, 1931.

Electric Ironer

Several radical departures from the traditional design and construction of electrical ironing machines are to be found in a new Moto-Iron now being manufactured by the Crosby Radio Corp. and sold through Crosley dealers throughout the country.

In the Moto-Iron a "patting" principle takes the place of the mangle of the rotary ironing machines. The actual ironing is accomplished by means of a "bucking" arm (ironing pad) moving up and down at the rate of approximately 700 times per minute, lightly patting the cloth being ironed against the heated surface of the iron as the operator draws the material over the work rest. The surfaces of the iron and the "bucking" pad are no larger than that of the ordinary iron. Every type of ironing—from ordinary flat work to the most exacting hand pressing of delicate fabrics—may be done with the machine.

The Moto-Iron is of extremely simple construction. There are but four moving parts—motor shaft, eccentric shaft, connecting rod and "bucking" arm. The machine is powered by a 1/20-hp. motor, built into the machine below the work rest. Thermostat control permits a variation in temperature of from 250 to 500 deg. F.

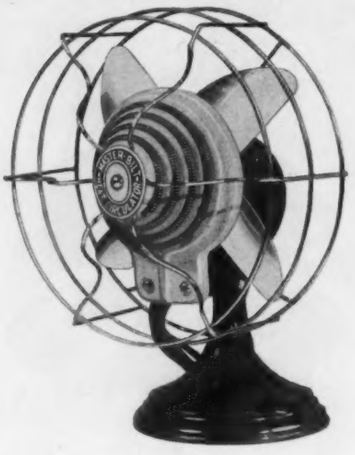
A single small lever conveniently placed on the side of the iron arm permits the operator to lower and raise the heating unit and thus regulate the degree of pressure on the garment being ironed. This lever is also connected with a switch which automatically starts or stops the motor as the heating unit is being lowered or raised. The "bucking" pad is removable and consists of several layers of various cloth materials and steel wool to provide it with the greatest possible resiliency.

Weight of the machine is 42 lb. It will sell at retail on the Pacific Coast for $72.50. —ELECTRICAL WEST, Oct. 1, 1931.

Heat Circulator

In the new Master-Built Electric Heat Circulator made by The Master Electric Co., Dayton, Ohio, the air is circulated over the heating element by means of a four-blade electric fan driven by a 1/400-hp. induction type motor. The fan is economical to run, the operating cost of the motor being only a fraction of a cent per hour, and because of the circulating air the heating element delivers a maximum amount of heat for the current consumed. The motor is of the brushless type which does not hum, vibrate or cause radio interference.

Of molded black Mecolite base and motor housing, with chromium plated fan blades and guard, the fan presents a striking appearance. Retail price, $8.50.—ELECTRICAL WEST, Oct. 1, 1931.



Westinghouse Refrigerators

Two new refrigerators which will appeal to the housewife because of their beauty, convenience, and trouble-free operation have just been announced by the Westinghouse Electric & Mfg. Co., Mansfield, Ohio.

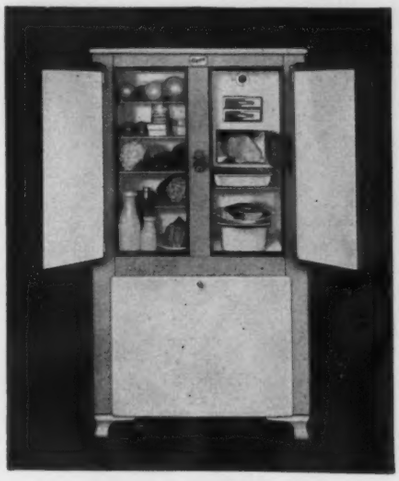
Cabinets of these new models are of welded steel-shell construction. Their features include a usable buffet top, broom-high legs, convenient arm-high temperature selector and defrosting switch, and satin finished chrome-plated hardware. They are finished in durable humidity and grease resisting white lacquer.

Safety-zone food compartments of these models are of one-piece removable porcelain-on-steel construction. The flat ribbon wire shelves in the food compartment are supported on stamped projections from the liner walls, and extra storage space for tall bottles is provided in both models. Their frosters are of the flooded type, porcelain enameled inside and out, and equipped with anodic non-corroding aluminum ice trays and one rubber tray. The ice capacity of both boxes is 96 cubes, or 11 lb.

Retail price of the WL-65 one-door model is $265, and of the WL-85 $370.—ELECTICAL WEST, Oct. 1, 1931.

Electric Refrigerator

Apex Electrical Mfg. Co., through its Pacific Coast subsidiary, The Johnson Washer Co., announces its advent into the electric refrigeration field. The Apex model JP-6 5.2-cu.ft. refrigerator with porcelain interior and lacquer exterior retails for $169.50 installed. Smaller models have artistic chromium plated fittings; de luxe models are equipped with piano hinges and automobile type handles. A wide range of freezing temperatures is provided by the cold control. All models have legs, 3-in. "Dry-Zero" insulation, and are covered by a three-year guarantee.—ELECTRICAL WEST, Oct. 1, 1931.

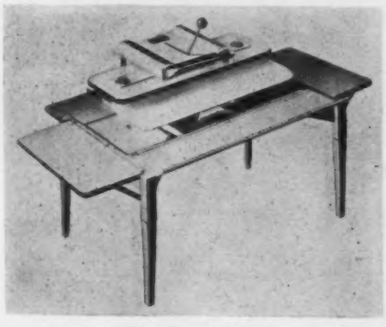


"Flatplate" Ironer

A new piece of laundry equipment for the home is this new "Flatplate" ironer just introduced by the General Electric Co.'s Merchandise Department at Bridgeport, Conn. The ironer is so simple to operate that only instructions of the most elementary nature are required.

The ironing unit is permanently mounted in a table with a removable white porcelain, acid-proof top. When not in use the ironer becomes a practical kitchen table of convenient size. When an ironing is to be done, the table top is removed and the sides and back unfold into three shelves which may be used as a storage space for the ironed and unironed clothes. In front there is a lap board which keeps the damp clothes from resting on the operator's lap.

The aluminum shoe forming the upper plate is heated by two elements, each of which is individually controlled by a thermostat, permitting the maintenance of different temperatures at each end of the shoe.—ELECTRICAL WEST, Oct. 1, 1931.



30-WATT LAMP FOR DECORATIVE LIGHTING—A new lamp for decorative lighting service is announced by the Incandescent Lamp Department of the General Electric Co. It is a 30-watt, 115-volt or 120-volt Mazda lamp that will serve well in many Christmas lighting decorations. The lamp is supplied with an inside-frosted glass bulb, outside spray-coated in white, ivory, flametint, rose or red, and priced at 15c.—ELECTRICAL WEST, Oct. 1, 1931.

Marble and Onyx Clocks

A group of exceptionally beautiful clocks in marble and onyx has been added by the Chicago Flexible Shaft Co., Chicago, to its line of Sunbeam electrical appliances. These range in price from $30 to $45 retail, and include types for all decorative schemes, from smartly designed cases in modern mood to pleasant, friendly types of more conventional design.

Illustrated is the Valencia model E-23, in which are combined choice specimens of three famous marbles: snow white Pedrara onyx, jet black Belgian marble, and the colorful, beautifully marked Robocevo onyx from Spain. These have been matched and fitted with great care and artistry in a clock whose lines suggest the Spanish influence. Gold dial, etched and hammered with black numerals. Height 8¾ in.; width 6½ in.; dial 3¾ in.—ELECTRICAL WEST, Oct. 1, 1931.

"Hold-Heet" Washer

A double-tub, agitator-type washer to sell for $79.50 retail is announced by the Conlon Corp., Chicago. This "Hold-Heet" washer has the same specifications and mechanical refinements of former Conlon models, the manufacturer points out. The washer has a capacity of 14 gal. of water and 7 lb. of dry clothes. Outside finish is French gray porcelain. A Lovell all-metal cadmium plated pressure cleanser or wringer is mounted to the gear box and is of full open-top construction equipped with 2¼-in. black rubber rolls. Of the reversible swinging type, it locks in six positions, has safety release and adjustable tension screw. Weight of the complete machine is 168 lb.; height to top of tub, 33 in.—ELECTRICAL WEST, Oct. 1, 1931.

Trade Literature

¶ SWITCHBOARD CATALOG—Printed in three colors, with the blue and gold of the affiliated organization, Square D, as a motif, bulletin No. 700 of the Diamond Electrical Mfg. Co., Ltd., Los Angeles, has 90 pages devoted to various types and installations of switchboards. In addition to complete specifications, the new catalog contains a detailed group of recommendations for dead-front, live-rear and dead-front, dead-rear switchboards and power panels.

¶ SAFETY PANELBOARDS—The Switch & Panel Division, Square D Co., Detroit, has just issued a supplementary section to bulletin No. CA-505, which describes its standard convertible safety panelboard. The supplementary section, bulletin No. CA-505-A, describes a new shallow-type convertible safety panelboard with capacities up to and including 100 amp., 250 volts.

¶ INSULATION MATERIALS—The use of lava and magnesium oxide ceramic for various electrical and mechanical uses is explained in catalog No. 32 just issued by the American Lava Corp., Chattanooga, Tenn.

¶ MOTORS—Type "RS" repulsion-start, induction, single phase motors made by the Century Electric Co. are the subject of a four-page addition to the catalog of that company.

¶ CREOSOTED PINE POLES—A 16-page booklet published by the International Creosoting & Construction Co., Galveston, Tex., lists 1,500 cities of the United States that use creosoted pine poles in business or residential sections.

¶ FLOODLIGHTING—In its bulletin No. 2236, entitled "Floodlighting — A Business Builder," Crouse-Hinds Co., Syracuse, N. Y., describes ways of accomplishing the exterior floodlighting of business buildings.

¶ LATHES—A new general catalog, No. 92, has just been issued by the South Bend Lathe Works, South Bend., Ind. The catalog contains illustrations, descriptions and prices of the South Bend series "O" line of lathes from 9-in. to 18-in. size.

¶ BATHROOM CABINET LIGHTING—An illustrated folder on the "Edge-Lite Aplakay," a bathroom cabinet lighting fixture, has been published by the Henkel "Edge-Lite" Corp., 900 North Franklin St., Chicago.

¶ SAFETY SWITCH—Special features of the new Square D Type A safety switch manufactured by the Square D Co., Detroit, are described in a mailing piece recently distributed by that company.

¶ MOTOR STARTER—In a newly published bulletin The Electric Controller & Mfg. Co., Cleveland, Ohio, describes the outstanding features of its No. 2 type "ZO" oil-immersed, vapor-proof, wall mounted motor starters.

¶ ARC WELDING COMPETITION—A booklet containing the rules governing the second Lincoln arc welding prize competition, now in progress, has recently been issued by The Lincoln Electric Co., Cleveland, Ohio.

¶ OUTDOOR LIGHTING—Standards, lanterns and brackets for outdoor lighting manufactured by Beardslee Chandelier Mfg. Co., Chicago, are illustrated in the company's catalog No. 30, Section 1, recently published. Prices are included.

¶ IMMERSION HEATING UNITS—"Falcon" electrically heated melting and coating tanks suitable for asphalts, tars, compounds, varnishes, oils and similar viscous materials are the subject of bulletin No. 230 of H. O. Swoboda, Inc., 3400 Forbes St., Pittsburgh, Pa.

¶ REFRACTORY CEMENTS AND PLASTICS—A fully illustrated bulletin describing uses, methods of application and various tests on settling, cracking and shrinking has been issued by the Babcock & Wilcox Co., 85 Liberty St., New York.

Barometer

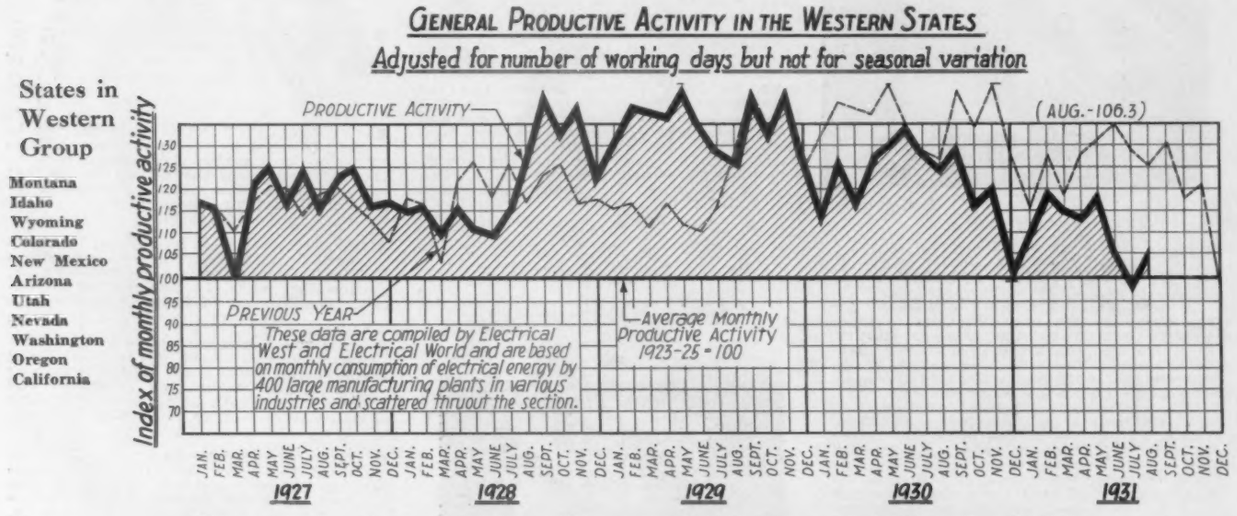
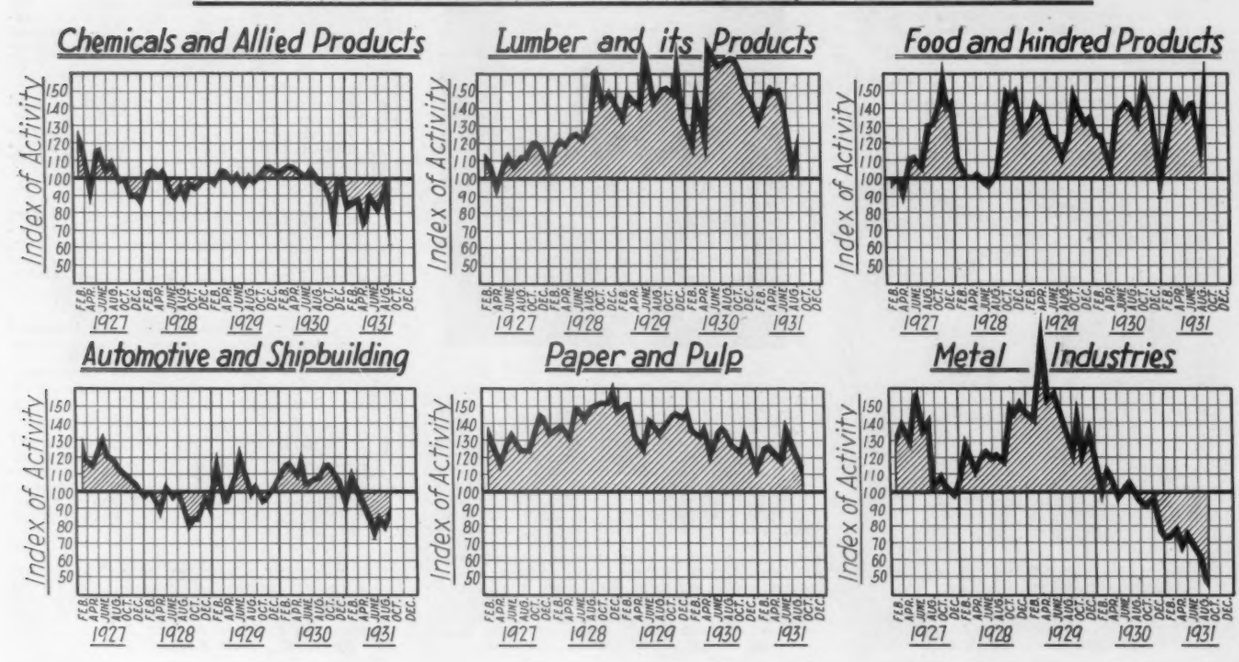
RECOVERY to the level of June, after an intervening month at a lower level, is shown by the August index of industrial activity in the West, based on energy consumption in individual establishments reporting each month. These show a complete regaining of the 10-per-cent loss in July compared with June, bringing up the level to within 15 per cent of last year's; July figures had shown a loss of 25 per cent. This strong rise in the West is in contrast with a slight decrease in the country as a whole.

Several industries contributed to the rise, notably foods, which rose to a new peak despite moderate downward movements in some of the reporting companies. Forest products also advanced. Although this industry continues in the quiet condition reflected in the exceptionally low index of July, a number of the mills show higher activity than in the late fall of last year, when that industry as a whole was 20 per cent above its present position in productive activity.

In the stone-clay-glass group, of which cement manufacture is the chief branch, the level continues below last year's but comes within 7 per cent of it, and is higher than in any month since February.

These returns for August have been peculiarly erratic. Usually the various plants in a given industry group show a certain unity of movement, rising and falling more or less together. Lately this rule has not held. From this it would seem that while upward movements are definitely in evidence here and there, they are not yet sufficiently strong to constitute a clearly marked trend.

Indexes of Industrial Activity in the Western States

(All figures adjusted for number of working days.)

	August 1931	July 1931	June 1931	August 1930	Average First Eight Months 1931	Average First Eight Months 1930
All industry	106.3	96.8	106.4	125.0	111.2	125.9
Chemicals	61.6	87.8	78.0	96.7	79.1	104.6
Food	165.0	125.5	145.4	135.0	142.8	132.6
Forest products	125.4	110.4	139.0	168.2	139.2	156.8
Metals group	43.8	47.8	60.8	91.1	62.9	101.1
Paper and pulp	115.5	124.2	132.4	129.2	126.9	132.7
Rubber	103.1	146.0	151.9	140.5	150.9	163.7
Shipbuilding	85.2	77.8	80.5	115.1	89.8	113.5
Stone, clay and glass	96.5	82.8	89.5	103.3	92.3	101.2